NOTES ON *HETEROCERA*, WITH DESCRIPTIONS OF NEW GENERA AND SPECIES.

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FOR some time past we have been working at several families of *Heterocera*, and publish in this paper a number of notes on structural characters and affinities, as well as diagnoses of genera and species which are to our knowledge new to science. The descriptions of new species are by Walter Rothschild, while Dr. K. Jordan is responsible for the remainder of this article as far as it is undersigned "K. J."

We have thought it best to give the exact size of the wings of the new species by measuring three lines—the anterior margin, exterior margin, and posterior margin. The anterior margin is measured from base of subcostal nervure to tip of vein 8 of forewings, or vein 7 of hindwings; the posterior margin from base of subcostal nervure to tip of vein 1^b; and the exterior margin to forewings from tip of vein 8 to tip of vein 1^b, that to hindwings from tip of vein 7 to tip of vein 1^b, if not otherwise stated. AM means anterior margin, EM exterior margin, PM posterior margin.

If the wing of a species is different in general shape from that of an allied species, the mere expanse (length of wings + body) does not give us any idea about that difference.

SATURNIDAE.

1. **Opodiphtera inversa** Rothsch. sp. nov.

Larger than *astrophela* Wlk., tawny ochraceous with grey shades. Ocelli much smaller, but with a larger vitreous centre, that of hindwings considerably more circular. The inner band on forewings is straight behind cell, not curved, and is joined along the median vein to intracellular portion, forming two right angles. The band is double, the inner side pinkish grey, outer side dark vinaceous. The outer band is much nearer posteriorly the outer margin, and differs conspicuously, as also do the other bands, by having the light half inside, while in *astrophela* the light half is outside. On hindwings is a curved double band, of same colour as those on forewings, at basal half, which crosses cell at origin of vein 3; this band is absent from the ♂ of *astrophela*. Half-way between ocellus and outer margin of hindwings is a band composed of three lunulated lines; the two outer are dark vinaceous, the inner one pinkish grey. *Underside* more shaded with pinkish grey; outer bands of both wings indicated, but pinkish only. Collar grey; rest of body similar to wings.

Expanse: forewing AM 55 mm.; EM 36 mm.; PM 33 mm.
„ hindwing „ 34 „ ; „ 30 „ ; „ 37 „

Hab. Mailu, British New Guinea (Anthony, July 1895); 1 ♂. W. R.

SPHINGIDAE.

2. **Phlegethontius stuarti** Rothsch. sp. nov.

Upperside: forewings greyish white, with a strong yellow wash which makes them have the colour of ground mustard seed. On the discocellulars is a white stigma surrounded by a black ring; obliquely between this and the costa is a smaller stigma, also surrounded by a black ring. At the base of wings are three black dots, one before costa and two behind it, the two latter including a white dot between themselves. Between base and stigmata are four zigzag transverse black lines, which converge behind till before inner margin two amalgamate, leaving only three. Beyond the stigmata are three black lines which are strongly dentated; the space between the outer two is much paler than between the first and second. Between the outer of these three lines and the outer margin are two rows of irregular anchor-shaped spots, one quite close to the outer margin, the other half-way between it and the dentated lines. The outer margin is very distinctly and strongly marked in alternate black and white spots. Round the area of the stigmata the wings are more or less clouded with black scales. Hindwings same ground-colour as forewings, but darker, especially in costal and apical area. In the hairy basal region is a black band, cut short posteriorly, where it is followed by a square whitish spot. There are three black dentated bands across outer half of wing, terminating at anal angle, the inner one of which is sometimes double, and stands closer to the second than that does to the third. Outer margin equally distinctly marked as in forewings.

Underside: all four wings grey, with yellow tinge much feebler. Basal half of forewings darker. Apical half of both pairs of wings crossed by three zigzag dentate black lines.

Head above lavender-grey, a spot on either side in front of eye black; palpi almost maize-yellow. Thorax above same colour as wings; two small black dots behind head, followed by two transverse lines (interrupted or complete), two black dots in centre, and one on each side above base of wings.

Abdomen darker, except middle of first two segments above and whole underside; down the centre of abdomen above run two rows of white spots at the hind edges of segments. On each side of second segment is a black patch, and on the five following ones an ochraceous rufous (*not yellow*) patch, partly surrounded by black. The last patch is small in the *male* and practically absent in the *female*.

Expanse: forewing AM 53 mm.; EM 29 mm.; PM 31 mm.
„ hindwing „ 32 „ ; „ 21 „ ; „ 19 „

Hab. La Paz, Bolivia (Arthur Maxwell Stuart, October 1895); 2 ♂, 1 ♀.

The peculiar mossy appearance of the scales and the greenish yellow ground-colour are such that, when the wings are closed and the insect is at rest, it must be practically impossible to distinguish it from yellowish lichens. W. R.

3. **Theretra crossei** Rothsch. sp. nov.

This is most closely allied to *T. lucasi* Wlk. and its Indo-Australian allies, but I must describe is as distinct, for I have two specimens identical, and it comes from West Africa.

Differs from *lucasi* Wlk. by the conspicuous convex outer margin and the much rounded inner angle. Between the margin and the row of black dots on the veins

are two zigzag transverse lines, *not* straight as in *lucasi*, and the spots stand behind the line reaching the apex, while in *lucasi* they stand upon the line.

Expanse: forewing AM 33 mm.; EM 17 mm.; PM 21 mm.
„ hindwing „ 20 „ ; „ 13 „ ; „ 11 „

Hab. Assaba, Lower Niger (Dr. Crosse); 1 ♂. Gold Coast ?; 1 ♂.

I name this species after the collector, but hope soon to have the pleasure of naming a more conspicuous insect after him.

Panacra mira Swinhoe, *Cat. Lep. Het. Oxf.* I. p. 13. n. 54. t. 1. f. 6 (1892) (Cape York), is a synonym of *P. turneri* Lucas, Queensland newspaper; Miskin, *Proc. R. Soc. Queensl.* 1891. p. 62 (Mackay). W. R.

4. **Pachygonia maxwelli** Rothsch. sp. nov.

This species is very distinct from any of the others of the genus, but stands nearest to *P. coffeae* Wlk.

Upperside: both pairs of wings longer and narrower than in *coffeae*. The submarginal line of forewings runs from inner angle to vein 4, and is here five millimetres from outer margin; from vein 4 it runs straight towards the apex, where it ends at vein 7; while in *coffeae* it is zigzag, does not form an angle, and is more or less parallel with outer margin. The three transverse lines between costa and vein 4 run obliquely inwards in *maxwelli*, while in *coffeae* they run obliquely outwards. A pale pinkish grey line runs from inner angle to the small black stigma on the discocellulars. Near the base of inner margin is a large black wedge-shaped patch abruptly terminated at vein 2; in *coffeae* this patch is scarcely darker than rest of wing, and instead of being cut off by vein 2 it runs up gradually narrowing to the costa. On hindwings the black transverse band across the yellow disc is wanting, and the yellow area itself reaches to the base; apex rufous red followed by black; at anal angle are four lines terminated by vein 3—inner one broadest, pale pink, next blackish, third very narrow, pinkish, fourth grey.

Markings of underside corresponding to upperside, but much heavier and more distinctly apparent than in *coffeae*, and ground-colour much redder.

Head and thorax grey, with a black median line, forked behind; on each side of thorax is a large black patch edged with white behind. Abdomen grey, variegated with rufous, below almost rufous.

Expanse: forewing AM 32 mm.; EM 16½ mm.; PM 21 mm.
„ hindwing „ 19 „ ; „ 13 „ ; „ 13 „

Hab. San Augustino, near Mapiri, Bolivia, 3500 feet (Arthur Maxwell Stuart, September 1895); 1 ♂. W. R.

5. **Unzela variegata** Rothsch. sp. nov.

Upperside: forewings differ from *U. japix* (Cram.) firstly in that the transverse line which separates the area of the basal fourth from the dark patch in centre of wing is serpentine, while it is straight in *U. japix*; then in the basal area itself being in the new species cinnamon-grey, with a longitudinal brown streak at inner margin, while in *japix* it is olive-brown, with a round lavender patch in centre. The central dark patch is much less distinct, and instead of being sharply incised on the outer side is constricted into the shape of an hour-glass. Hindwings in *japix* are uniform dark brown, with two short pink streaks at the anal angle, while in *variegata* they

are yellowish grey with a broad dull brown border and a narrow transverse line beyond the middle.

Underside: the wings in *japix* have pale grey borders; in *variegata* these borders are broadly dark brown, while the rest of the wings is much more whitish. Abdomen on underside in *variegata* much dirtier greyish white. The antennae are longer and thicker, and the *male* claspers are larger.

Expanse: forewing AM 25 mm.; EM 12 mm.; PM 17 mm.
„ hindwing „ 17 „ ; „ 12 „ ; „ 10 „

Hab. San Augustino, near Mapiri, Bolivia, 3500 feet (Arthur Maxwell Stuart, September and October 1895); 2 ♂. W. R.

AGARISTIDAE.

Note.—My attention was drawn to the definition of this family especially by Prof. Dr. Karsch's article on the African *Agaristidae* in *Ent. Nachr.* p. 343 (1895), where that learned author says that, according to Aurivillius, the *Agaristidae* are Noctuid-like moths distinguished from the allied families by vein 5 of the hindwing originating from the apex of the cell in the middle between veins 4 and 6; a short definition which I found in discordance with Hampson, *Moths of India* II.—a work which every student of moths will appreciate the more the longer he works with it, though in detail it is, of course, not free from errors—who includes in the *Noctuidae* a number of forms which Karsch's definition would bring to the *Agaristidae*, and I became convinced that a few stray notes on the structure of some genera and species of the Agaristids would be of some help in coming in future to an exact delimitation of the present family. Karsch's definition is based upon that of Aurivillius in *Ent. Tidskr.* p. 183 (1892)—in fact it is only a repetition of one of the nine characters by which Aurivillius distinguishes that family; and I therefore shall annex my notes to those nine characters, which I give in the same order as Aurivillius did.

I. "Stirn aufgeblasen oder mit einer hornigen Erhabenheit."

The forehead is indeed mostly gibbose and often armed with a more or less prominent conical processus, which is truncate at the tip, and bears a circular or subcircular ridge. In Trimen's *Pais pulchra*, and in a new genus and species from Madagascar described in this paper, the processus is long and thin; in *Copidryas gloveri* S. & R., *Apina callisto* Wlk., and in Butler's *Aegocera cornigera* it is naked and has the form of a flattened, slightly excavated horn, the tip of which is rounded, or bi- or tripartite, recalling the frontal horn of certain *Cetonidae*. A great number of Agaristids have, however, the forehead only slightly convex, such species as *Agarista saturata* Wlk. and allies for example, and are without a frontal processus or horn, the circular ridge also being wanting; while on the other hand well-developed frontal horns occur amongst the *Noctuidae*. *Agrotis segetum* Schiff. has a feeble, but distinctly visible, frontal circular ridge. In Cramer's *Phalaena hyroglyphica* (*Pap. Ex.* II. t. 147. f. D) the front of the head is produced into a short cone. *Agrophila sulphuralis* (L.), various species of *Acontia* O. and of allied genera—for example *A. dispar* Wlk. (*Lep. Het. B. M.* XII. p. 790), *Omia cymbalariae* Hb., *Heliodes rupicola* Hb.—have a more or less obviously gibbose forehead with a circular horny ridge; whereas in the species of *Megalodes* Guen. the head is armed with a long horn as in *Copidryas* and *Apina*. Vein 5 of the hindwings comes in the Noctuids mentioned here from below the middle of the discocellular veinlets.

2. "Rippe 1 der Vorderflügel wurzelwärts nicht gegabelt, einfach."

3. "Rippe 5 der Vorderflügel nahe an der Rippe 4 entspringend."

These two characters the *Agaristidae* have in common with the *Noctuidae* and *Arctiidae*. A bifurcation of the submedian nervure to the forewing is sometimes obviously indicated by a longitudinal furrow in the basal portion of the vein.

4. "Rippe 2 der Hinterflügel nahe an der Hinterecke der Mittelzelle entspringend."

The position of vein 2 to the hindwings is neither amongst the *Agaristidae* nor in the Noctuids, Arctiids, Hypsids, etc., of great constancy, and this vein stands on an average not nearer to vein 3 in the *Agaristidae* than in the allied families. We find the extremes in respect to the position of vein 2 of the hindwings in *Agarista agricola* (Don.), *Phalaenoides latinus* (Don.), *Euthisanotia argentata* Druce, with vein 2 coming from near vein 3, and on the other hand in *Pais pulchra* Trim., *Charilina amabilis* (Drury), and *Eusemia mollis* Wlk., in which that vein originates before the apical third of the cell.

5. "Rippe 3 und 4 der Hinterflügel aus einem Punkte (der Hinterecke der Mittelzelle), oder mit sehr kurzem gemeinschaftlichen Stiel entspringend."

This character applies to many *Agaristidae*, *Noctuidae*, *Arctiidae*, etc., but is by no means met with in all Agaristids; vein 3 is removed from 4, though it always stands nearer to 4 than to 2, in many species of various genera, most obviously so in *Eusemia mollis* Wlk. and *Agarista luctifera* Boisd.

6. "Rippe 5 der Hinterflügel aus *der Mitte* der konkaven Querrippe ausgehend."

Prof. Karsch (*l.c.*) thinks this character the most important one, and sufficient to distinguish the *Agaristidae* from their allies by. In the Arctiids, Hypsids, and most Noctuids, etc., vein 5 of the hindwings comes from the lower angle of the cell, or from between lower angle of the cell and middle of the discocellular veinlets. In a great number of Noctuids vein 5 approaches the centre of the discocellulars; in others it comes just from below the centre; while in others again, as in *Heliothis* Tr. and some allied forms, it originates exactly from the middle of the apex of the cell. We can, in fact, draw up a series of genera which show every intergradation between the two extremes, the position of vein 5 at the lower angle of the cell and the position in the centre of the discocellulars; compare *Barrasa* Wlk., *Charidea* Steph., *Agrotis* O., *Asperasa* Moore, *Erastria* O., *Bryophila* Tr., *Heliothis* Tr. And this occurrence of intergradations makes it probable to me that not all the species of Noctuoid moths with vein 5 coming from the middle of the discocellulars are true *Agaristidae*, and that there might be true *Agaristidae* with that vein originating below the centre of the discocellulars. Even if we admit *Heliothis* Tr., *Glottula* Guen., *Sphetta* Wlk., and some other genera to be Agaristids, there remain many others, like *Empsephopaectes procinctus* Grote from California, which I cannot convince myself to be anything else but *Noctuidae* in spite of vein 5 to the hindwings having the same position as in *Episteme* Hübn. (*Eusemia* Dalm.). On the other hand, in a number of true *Agaristidae*, in *A. albomarginata* Moore, *amatrix* Westw., *semperi* Feld., *hesperioides* Wlk., and others, there is a peculiarity in the neuration of the hindwings—explained on p. 37—which gives vein 5 the appearance of coming from near the lower angle of the cell. In *Phalaenoides albamedia* Luc. vein 5 stands below the middle, owing to the development of a stridulating organ; and, alas, in *Agarista belangeri* Guér. vein 5 is decidedly depressed at the base, as it is in typical Arctiids, Hypsids, etc.

In *Agarista agricola* Don. and its nearest allies vein 5 stands nearer to 6 than to 4.

7. "Rippe 8 der Hinterflügel nahe an der Wurzel mit der vorderen Mediana vereinigt und daselbst mehr oder weniger verdickt."

In this respect the *Agaristidae* and *Noctuidae* are identical, and exhibit rather important variation. In most *Agaristidae* the basal partition of the subcostal nervure (vein 7), before touching vein 8, is very feebly developed, and veins 7 and 8 appear, therefore, to be shortly stalked together, the more so as vein 7 is mostly not anastomosed to (confluent with) vein 8, but joined to it by a very short thick bar, which has such a position as to appear to be a prolongation of the main part of vein 7 (compare *Episteme victrix* Westw., *dentatrix* Westw., *Aegocera*, *Metagarista*, *Ovios*). In *Agarista agricola* Don. and allies the basal partition of vein 7 is obliterated, so that veins 7 and 8 are actually stalked, as in many Arctiids. Sometimes veins 7 and 8 are merged together for about ½ mm. (*Pycnodontis* Feld., *Clitis* Wlk.); or they touch one another, remaining separated by a slight furrow (*Mila* Auriv., *Diamuna* Wlk.), or by a deep and rather broad one (*Godasa* Wlk.). The basal partition of vein 7 is much thicker in *Godasa*, *Mila*, *Clitis*, etc., than in *Episteme*, *Agarista*, *Phalaenoides*, *Aegocera*, etc.

8. "Hinterflügel mit Haftborsten."

This character the *Agaristidae* have in common with the *Noctuidae*, *Arctiidae*, etc.

9. "Die Fühler gewöhnlich vor der Spitze mehr oder weniger verdickt."

There occur very different types of antennae in this family. The typical antennae are more or less club-shaped (*Agarista*, *Episteme*, *Aegocera*, *Rothia*, etc.), but very often the antennae are not thickened towards the apex, or they are even setiform (*Phalaenoides funebris* Moore, *albamedia* Luc., *Zalissa*-species); and there are a good number of genera with serrate and pectinate antennae (*Apina callisto* Wlk., *Aucula* Wlk., *Pycnodontis* and *Leiosoma* Feld., *Psychomorpha* Harr., and others). Clubbed antennae are found, besides *Castniidae*, also among other families of moths—for example, in *Cistidia* Hb., a genus of *Geometridae*.

As it becomes pretty clear from the above short notes that none of the nine points of Aurivillius's definition of the present family are really decisive, every one of them either occurring in other families or being found only in part of the true *Agaristidae*, an exact delimition of the family remains still a desideratum; but as we believe that, before our knowledge of the earlier stages of *Agaristidae*, which seem to exhibit some constant characters, has increased, and till we know more of the anatomical and morphological details of the Noctuoid and Bombycoid moths, an exact delimitation of *Agaristidae* will be impossible, we think it after all best to accept, for the present, Aurivillius's view, and to unite to the *Agaristidae* all Noctuid-like moths with vein 5 of the hindwings originating in or before the middle of the discocellulars, and to exclude all other forms, with the exception, I am sorry to say, of *Agarista belangeri* Guér.

To the *Agaristidae* of Kirby's *Catalogue of Lep. Het.* we have to add some genera and species which are undoubtedly Agaristids, and to remove some which belong to other families.

Apina callisto Wlk., Kirby's *Cat.* p. 442, is certainly an Agaristid. *Apina angasi* Wlk. is by no means generically identical with *callisto*; it is no Agaristid. Vein 7 of the hindwing is in *angasi* anastomosed to vein 8 for about 2 mm.; the same character we find in *Satara aequata* Wlk., Kirby's *Cat.* p. 33 (= *Arctioneura lorquini* Feld.), which is likewise no Agaristid, but an Arctiid *s.l.*

Callimorpha lemnia Boisd., in Kirby's *Cat.* under *Episteme* Hb., is most probably a Geometrid.

Eusemia siriella Druce, Kirby's *Cat.* p. 28, is a Geometrid according to the type-specimen.

The genera *Hecatesia* Boisd. (Kirby's *Cat.* p. 12), *Diamanna* Wlk. (*Lep. Het. B. M.* XII. p. 960), *Clitis* Wlk. (*l.c.* p. 961), and *Aucula* Wlk. (*Trans. Ent. Soc. Lond.* (3). I. p. 253) are Agaristids.

Listonia jamaicensis Möschler, *Abh. Senk. Nat. Ges.* XVI. p. 37. t. 13 (1891). is perhaps also an Agaristid.

Duga Wlk., in Kirby's *Cat.* amongst the *Agaristidae*, p. 898, contains in the *Catalogue* two species, *pinguis* and *zemire*; *D. pinguis* Wlk. is a Geometrid, *D. zemire* (Stoll) a Pyralid. Swinhoe's *Duga rana*, *Cat. Lep. Oxf.* I. p. 96. t. 3. f. 3 (1891), is not a Lithosid, as Swinhoe says, but a Geometrid.

Phaegorista pallida Druce, Kirby's *Cat.* p. 417, is the same as *Sarothrocera* (nec *Sarothrocera* White, 1845) *alluaudi* Mab., according to Mabille's figure and the type of *pallida*. Druce gave as habitat "Ogowai, East Central Africa," perhaps (?) a mistake for Ogowe R., West Africa. The name of *pallida* has the priority over that of *alluaudi*. I agree with Karsch that this insect is not an Agaristid, though vein 5 of the hindwings comes from the centre of the discocellulars.

Phalaena Bombyx mummia Cramer, *Pap. Ex.* III. p. 61. t. 228. f. c (1782) (Surinam) is an Agaristid, and comes into the genus *Pycnodontis* Feld., not into *Are* Wlk., *Lep. Het. B. M.* III. p. 758 (1855), where it is placed by Walker with a "?".

In pattern of the forewings many *Agaristidae* agree perfectly well with the *Noctuidae*. A most obvious and rather widely distributed character amongst the Agaristids is the occurrence of metallic bluish scales on the forewings above, which often form conspicuous patches, especially one in the cell beyond the middle and another upon the discocellular veinlets. Red, yellow, and white markings on a black ground are prevalent in this family, and it appears to me that there is rather commonly a variation of the colour within the same species from white to yellow, and from yellow to red. This variability has not yet been noticed, except in the genus *Episteme* Hb. by Hampson, *Moths of India*, and so a good number of colour-varieties stand still in Kirby's *Catalogue* as species. In *Eusemia longipalpis* Kirsch the ♂ has the band of the forewings and the patch on the hindwings white; of the *female* sex of this species there occur three forms, one similar to the *male*, a second with the patch to the hindwings orange, and a third with both the patch to the hindwings and the band on the forewings orange; intergradations prove that these forms belong to one species. *Eusemia longipalpis* and some other *Agaristidae*, as well as *Milionia glauca* (Stoll), apparently confirm Eimer's opinion that the new colour develops from the posterior side. The white-marked *Aegocera trimeni* Feld. and the orange-coloured *A. tricolor* Druce are not only identical in the outline and position of the markings, but there occur also specimens of *trimeni* with the hindwings obviously tinged with orange, and examples of *tricolor* which are much paler than others. There are two specimens of a *Mitophrys* Karsch from Sierra Leone in the Tring Museum, one marked with orange, the other with white. We find no other difference between the specimens besides that disparity in colour, and are convinced that the two specimens are the same species; they agree fairly well with *Mitophrys halans* Karsch, *Ent. Nachr.* p. 354. t. 2. f. 7 (1895), and *M. agoma* Karsch, *l.c.*, respectively.

Among the numerous species (?) of *Xanthospilopteryx* Wall. similar cases of dichromism can be observed. The hindwings of *X. pardalina* (Wlk.) are yellow

or red; sometimes they are orange. *X. gergon* (F.) has occasionally orange hindwings instead of red ones. *Rothia eriopis* (H. S.), from Madagascar, has bright yellow hindwings in the ordinary type; the Tring Museum possesses a series of specimens taken in the same district with *eriopis* which have the hindwings bright carmine.

Sexual dichromism is not seldom. Usually the *female* is darker than the *male*; such is the case in *Phalaenoides donowani* Boisd., *tropica* Luc., in the genus *Aegocera*, in *Ophthalmis mollis* (Wlk.), etc. The *female* of *Eusemia saturata* Wlk. (= *doleschalli* Feld.) has the bands on fore- and hindwings orange, while they are white in the *male*.

Other secondary sexual differences are not rarely met with. Haase, *Iris* I. p. 165 (1887), noticed already tufts of long hairs at the base of the abdomen of the *males*, and described them as scent-organs. These organs are present in all typical *Agaristidae*, but as the hairs fall off easily, they often escape notice. A number of species have, besides, another scent-organ, not mentioned by Haase, on the hindwings within a deep longitudinal fold (*Episteme dentatrix* Westw., *albomarginata* Moore, *hesperioides* Wlk., etc.). In the *males* of *Andrhipparis* Karsch and *Hespagarista* Wlk. the abdomen is furnished at the tip with a tail of long hairs. *Hecatesia* Boisd., *Androloma* Grote, and *Aegocera tripartita* Kirby have in the *male* a stridulating organ on the forewings; a similar one, situated on the hindwings, is present in the *male* of *Phalaenoides albamedia* Luc.

The antennae are usually thicker in the *male* than in the *female*; in the species with pectinated antennae, the pectinations are shorter in the *female* sex, sometimes scarcely perceptible. The forehead is narrowed behind in the *males* of a number of species, such as *Aegocera trimeni* Feld., *bimacula* Wlk. The terminal joint of the palpi is usually, not always, longest in the *female*.

In consequence of my researches on the structural characters of the *Agaristidae*, which showed me that under the genera *Agarista*, *Episteme*, *Phalaenoides*, etc., very heterogeneous forms stand united, I am obliged to propose a good number of new genera, which I base on such characters as can more easily be grasped. There is only one alternative—either to split up the family in a greater number of genera, or to treat all *Agaristidae* as "*Agarista*." In what state the division of the *Agaristidae* into genera at present is will be understood when I say that the diagnosis of *every* genus of this family in Hampson, *Moths of India*, is wrong. I divide the *Agaristidae* in the following groups:—

Group I.—*Antennae simple; forewings without areole.*

a. African forms.—There are no representatives of this group in the Aethiopian fauna.

b. Indo-Australian forms.—Here comes only the genus *Episteme* Hb., with *lectrix* (L.) as type. Hampson, *Moths of India* II. p. 149 (1894), rejects Hübner's name of *Episteme* as "*genus non descriptum*" (many other genera of Hübner's have been accepted in that volume) and employs the name of *Eusemia* Dahn. The incompleteness of Hübner's generic descriptions is no reason not to accept his names; insufficient are so many (perhaps most) diagnoses of Lepidopterous genera created by ancient and modern authors, and so many genera have been based upon heterogeneous forms—even Hampson's diagnosis of "*Eusemia*" applies only to some of the species included in that genus in *Moths of India*—that I fully agree with

what Aurivillius says about names of genera (*Iris* 1894. p. 123), and must treat as *nomina nuda* only such names as are not accompanied by any diagnosis whatever. I hope I shall not be accused of inconsequency because Felder's generic name *Pycnodontis* is applied in this paper; we ought to have given a diagnosis to that name, but we prefer to wait until our researches on the American *Agaristidae* are more complete.

Without areole are the following species in Hampson's work: *lectrix* (L.), type of genus *Episteme* Hb., *nigripennis* Butl., *adulatrix* Koll., *maculatrix* Westw., *irenea* Boisd., *latimargo* Hamps., *fasciatrix* Westw., *vetula* Hübn., and perhaps *negrita* Hamps., which is unknown to me. Besides these species, which include numerous named varieties, true *Episteme* Hb. are also *bisma* Moore, *bijugata* Wlk., and a new species described below by Mr. Rothschild; all other forms that stand under "*Eusemia*" in Hampson's book have an areole and belong to other genera.

Westwood's figure of *E. maculatrix* Westw. in *Nat. Libr.* differs remarkably from that given later on in *Cabinet of Oriental Entomology*. K. J.

6. **Episteme conspicua** Rothsch. sp. nov.

Male.—*Upperside:* forewings black, with the usual slight blue gloss. Basal fifth has a number of scattered metallic blue scales forming two spots behind the costa; across the apical third of the cell runs a transverse yellow line. Beyond the cell is a broad yellow transverse fascia, split up below the lower median vein so as to form a separate spot at the angle of inner margin. In the middle between this fascia and the outer margin is a row of six very small half-obliterated spots. Hindwings similar to *bisma* Moore, but the black outer margin is much reduced, and the red discal area is paler and brighter.

Underside as above, only the costal margin for its basal half is lavender, and there is a round white dot at the basal fourth of cell: the cellular transverse line is broader, and the submarginal spots are large, very distinct, and of a lavender tint. Hindwings with submarginal spots distinctly marked, while above they are almost, if not quite, absent.

Body as in *bisma*, but the yellow abdominal bands broader, and the pale spots on the thorax smaller.

Female similar, but submarginal spots on both wings less developed.

Expanse: forewing AM 38 mm.; EM 23 mm.; PM 25 mm.
hindwing „ 25 „ ; „ 23 „ ; „ 15 „

Hab. Kina Balu, North Borneo; 2♂, 2♀.

This species is much larger than *bijugata* Wlk., which it resembles, and can at once be recognised by the yellow underside of the thorax, the extremely narrow and obsolete cellular band, and the presence of the round spot at the angle of inner margin of forewing. W. R.

c. American forms.—We have a moth from Jamaica of Noctuoid appearance, which has the antennae setiform and is without areole. The name of this insect we have not yet found.

Westwood, *Tr. Linn. Soc. Lond.* (2). I. p. 202. n. 7 (1877), says of his *Othria ecuadorina* that the areole is wanting; we do not know the species, and can, therefore, not say whether that statement is correct. K. J.

Group II.—*Antennae simple; forewings with areole.*

Karsch, *Ent. Nachr.* 1895. p. 347, divides this group in two sections, according to the position of vein 10 to the forewings; this nervule is either stalked with 8 and 9, or it arises from the areole. These two sections do not seem to me to be quite natural, as the following examples will show; but I accept them, as they are certainly very convenient for a preliminary grouping of the genera. In Druce's *Agarista darna*, *Ann. Mag. N. H.* (6). XIV. p. 22 (1895), from Timor, the position of vein 10 is so variable that we have specimens, caught at the same locality and at the same time of the year, with vein 10 being stalked with 8 and 9, others with vein 10 originating from the apex of the areole close to the stem of 8, 9, and others again with that vein coming from the areole and being distinctly separate from 8 and 9.

In the ♂ of *Hecatesia thyridion* Boisd. veins 9 and 10 are shortly stalked together, while in the ♀ vein 10 arises from the areole independently of 9.

The type of the genus *Othria* Westw., *Othria augias* (H. S.), *Lass. Schm.* I. f. 18 (1853), comes in most characters very close to *Phasis noctilux* Wlk., the type of *Phasis* Wlk., *Lep. Het. B. M.* II. p. 312 (1854), but has vein 10 originating beyond the areole, while in *Phasis* it arises from the areole. K. J.

1. *Vein* 10 *to the forewings stalked with* 8 *and* 9 *(often with* 7, 8, 9).

a. African forms.—Here come the genera *Xanthospilopteryx* Wllgr., *Massaga* Wlk., *Schausia* Karsch (see Karsch. *Ent. Nachr.* 1895. pp. 345, 346).

There are in the Tring Museum twenty-eight specimens of *X. africana* Butl., of which four are aberrant in having an orange spot in the black marginal border to the hindwings near the anal angle. In one of these specimens that spot is indicated, under a lens, by four reddish scales on the upperside of the left wing, while on the right wing it is represented by about a dozen scales; below, the spots are entirely absent from either left or right hindwing. The second example has above on both wings a very few scattered orange-red scales, whereas below the spot is well marked. In the other two specimens the spot is conspicuous above and below. Out of twelve specimens of *X. fatima* Kirby, five show a more or less obvious trace of that spot, especially below. This proves, I believe, that the occurrence of such a spot cannot be used to separate specifically specimens with and without that mark which are otherwise the same. *X. perdrix* Druce (=*eoa* Mab.) is, therefore, only an aberration of *africana* Butl., which itself is perhaps the red form of one of Walker's species.

We have a *female* of *X. hornimanni* Druce, from the Gold Coast, in which the basal and median white spots are confluent with one another along the costal, median, and submedian nervures, thus forming a large triangular patch that includes a black spot in the cell and another behind it. The markings on the wings of *Xanthospilopteryx* vary, in fact, a good deal. In *X. superba* Butl., for example, the spot before the middle of the inner margin is in our series of twenty-three specimens quadrate, or is prolonged along the submedian nervure, assuming the form of a broad comma, sometimes merging together with the second spot of the post-median row, or is reduced to a rather narrow oblique streak; in one example this spot is quadrate on one wing, linear on the other. The median band of *X. butleri* (Wlk.), of which species we have fifteen specimens, is often complete, sometimes it is constricted at the median nervure, and not rarely it is even widely interrupted; and so on. I fear that

a good number of the species based on slight differences in the shape of the markings, and on the red, yellow, or white colour of the hindwings, are mere aberrations.

Massaga delicia Butl., and *M. demena* Druce, *Ann. Mag. N. H.* (6). XIV. p. 23 (1895), belong to the genus *Misa* Karsch, *Ent. Nachr.* 1895. p. 349. K. J.

7. **Massaga angustifascia** Rothsch. sp. nov.

Female.—*Upperside:* all four wings black with an oily green gloss, the veins being strong metallic green. Wings crossed by a single convex cream-coloured band, situated about 1 millimetre beyond the cell of forewing, measured at the upper median vein. The band on forewings stops at the costal nervure, where it is narrowest, while it is widest at the discoidal nervules, being here a little more than 2 millimetres. At the apex of forewings the fringe is white, otherwise dark.

Palpi, except third joint, head, anterior coxae, anterior femora, and prothorax crimson; tip of abdomen yellow; rest of body oily green.

Underside of wings similar to above, but veins on hindwings from base to edge of band of same colour as band.

Expanse: forewing AM 29 mm.; EM 15 mm.; PM 21 mm.
„ hindwing „ 20 „ ; „ 14 „ ; „ 14 „

Hab. Old Calabar; 1 ♀.

Differs from *virescens* Butl. in the narrower band, it being uniformly wide on both wings and well outside the cell, and in the cream veins on underside of hindwings. W. R.

e. Indian forms with vein 10 of forewings being stalked with 8 and 9.

Here belong *Chelonomorpha* Motsch., *Burgena* Wlk., and a number of new genera.

Immetalia Jord. gen. nov.

♂ ♀. Front of the head scarcely with an indication of the usual conical processus, without a circular ridge or with only a trace of it. Palpi almost naked, *i.e.* clothed with short hairs, terminal joint at least three times as long as broad. Antennae a third shorter than the costal margin of the forewings, distinctly clubbed in either sex. Tibiae naked, or almost so.

Neuration: forewing with vein 10 stalked with 8 and 9; vein 3 close to 4 from hinder angle of cell; 2 from near hinder angle of cell; second partition of median vein* shorter than the respective portion of the outer margin. Hindwings with veins 3 and 4 together from lower angle of cell; 2 from near hinder angle of cell, as on forewing.

Male with the anal segment large, and the upperside of the abdominal margin of the hindwings clothed with long, often partly erect, hairs.

Type: *I. saturata* (Wlk.), *Lep. Het. B. M.* XXXI. p. 54 (1864) (Buru, *nec* Gilolo, *nec* Key); Swinh., *Cat. Lep. Het. Oxf.* 1. p. 162. n. 753. t. 5. f. 1 (1892) (Buru).

Comes nearest to *Xanthospiloptera* Wllgr., from which it differs in the longer and naked terminal joint of the palpi, the less gibbose forehead, and in the

* "Second partition" of the median nervure is the portion between veins 2 and 3.

shorter second partition of the median nervure to the forewings, this partition in *Xanthospilopteryx* being longer than the respective portion of the outer margin.

Chelonomorpha Motsch. is distinguished from the new genus by the presence of a conical frontal horn, the more hairy palpi, hairy abdomen, and again the longer second partition of the median vein to the forewings.

Felder's *I. dolesehalli* is a synonym of *saturata* (Wlk.). Besides *saturata* the following species must come in the new genus :—

Immetalia longipalpis (Kirsch), *Mitth. Mus. Dresd.* I. p. 130. n. 141. t. 7. f. 12 (1877) (Rubi, N. Guinea). As said above (p. 27), this species varies in the colour of the bands from white to orange, and is also not constant in the size and shape of the markings. It has received five names :—

1. *I. longipalpis* (Kirsch) is based upon a *female* with the band of the forewings yellow and that of the hindwings orange.

2. *I. brujini* (Oberth.), *Ann. Mus. Civ. Gen.* XV. t. 4. f. 6 (1880) (*no description, no habitat*), is based upon a *female* with the band white on either wing.

3. *I. doreana* (Swinh.), *Cat. Lep. Het. Oxf.* I. p. 164. n. 762. t. 5. f. 4 (1892) (Dorey), is based upon a *female* (according to the figure), not a *male* as Swinhoe says, with the bands white and rather narrow, that of the forewings being also rather longer than in ordinary examples.

4. *I. cynaspes* (Druce), *Ann. Mag. N. H.* (6). XIV. p. 22 (1895) (N. Guinea), is described from a *male* with the bands white, and a *female* with the band on the forewing white and that on the hindwing orange.

5. *I. prochyta* (Druce), *l.c.* (N. Guinea), is a *female* with the band on either wing orange.

William Doherty found all these forms together at Humboldt Bay, Dutch N. Guinea, September to October 1892. The *male* sex has apparently the bands always white, as is the case in *I. saturata* (Wlk.). Our series of twenty-one specimens exhibits a good deal of variation in the extent of the bands.

Immetalia bernsteini Voll., *Tijdschr. v. Ent.* VI. p. 132. t. 9. f. 1 (1863) (Morotai), and *josioides* Wlk., *Lep. Het. B. M.* XXXI. p. 54 (1864) (Gilolo), are the same ; Swinhoe, *Cat. Lep. Het. Oxf.* p. 162. n. 752 (1892), gave *josioides* Wlk. already as a synonym of *bernsteini*. K. J.

8. Immetalia bernsteini angustiplaga Rothsch. subsp. nov.

Male and *female:* this form differs from typical *bernsteini* Voll. in the much longer band of the forewings and the much narrower patch of the hindwings, and in the luteous apical fringe being more conspicuous; a striking difference also is that the patch of the hindwings gradually becomes narrower till it ends up almost in a point at the anal angle, while in the typical form it is uniformly wide.

Hab. Batchian (W. Doherty, March 1892); 1 ♂, 1 ♀. W. R.

9. Immetalia meeki Rothsch. sp. nov.

Male differs from *longipalpis* (Kirsch) in the band of the forewings being 3 millimetres wide, and reaching from the costa to almost the anal angle, just crossing submedian vein. It is of almost equal breadth from costa to lower median vein, while beyond to the submedian it is much narrower. Discal orange area of

hindwings reduced from the base so as to form a distinct band, 5 millimetres wide, reaching the costa.

Of *longipalpis* I only know of white *males*, while of *females* I have white ones, some with white on forewings and orange hindwings, and others all orange; while my three *males* of *meeki* have deep buff bands to forewings and orange bands on hindwings.

Expanse: forewing AM 27 mm.; EM 16 mm.; PM 19 mm.
„ hindwing „ 19 „ ; „ 17 „ ; „ 12 „

Hab. Fergusson Island, D'Entrecasteaux Islands (Meek, November 4th to 18th, 1894); 3 ♂. W. R.

10. **Immetalia cyanea** Rothsch. sp. nov.

Male and Female.—*Upperside:* forewings deep blue, with basal line below the costa and a spot in the cell of bright metallic blue green scales. Hindwings also blue, but with a more greenish tint. All wings in certain lights have a strong metallic lustre.

Underside: blackish brown, with strong blue gloss in side light.

Underside of palpi except third joint, a line in front of and one behind the antennae, white; legs deep brown with blue gloss; body deep blue; tip of abdomen rufous.

Expanse: forewing AM 25 mm.; EM 16 mm.; PM 19 mm.
„ hindwing „ 17 „ ; „ 17 „ ; „ 12 „

Hab. Biak, Geelvink Bay, Dutch New Guinea (W. Doherty, 1892); 1 ♂, 2 ♀. W. R.

11. **Immetalia celebensis** Rothsch. sp. nov.

Female.—*Upperside:* forewings differ from *saturata* (Wlk.) in having the orange band of equal breadth from the costal to the third median nervure, whence it is contracted towards the angle of inner margin; this band also stands more than two millimetres away from cell, while in *I. saturata* (Wlk.) it touches apex of cell. On the basal half of forewings there are four blue transverse lines, the two outer ones stopping short within the cell, and there are also two less distinct blue lines running along the lower median and submedian veins. Fringe white both at apex and inner angle, while in *saturata* (Wlk.) it is only white at apex. Hindwings black as in *saturata*, but with whole of fringe white.

Underside as above, but blue markings absent.

Underside of first and second joints of palpi, sides of forehead, centre of vertex, and three lines on the upperside of thorax white. Underside of thorax, coxae, femora, and inner side of tibiae ochre-yellow. Abdomen entirely black, while in *saturata* (Wlk.) the tip is reddish orange.

Expanse similar to that of *I. saturata* (Wlk.).

Hab. S. Celebes (W. Doherty, August and September 1891); 3 ♀. W. R.

Immetalia celebensis Rothsch. has the stem of veins 8, 9, 10 to forewings very short, while in *saturata* (Wlk.) and allies it is long; the frontal circular ridge is obvious; vein 3 of the hindwings is a very little removed from 4, and the femora have long and dense hairs beneath.

The species of *Iamaetalia* Jord. can be distinguished as follows:—

a. Disc of hindwings without band or patch.

*a*¹. Forewings with band.

*a*². Thorax black beneath:

1. *I. saturata* (Wlk.) from the Southern Moluccas. Walker also gives Gilolo and Key as "habitat" of *saturata*, but these islands are most certainly inhabited by different—at least subspecifically different—forms. The band of the forewing is variable in length in the Amboina specimens; it is always widest in the middle. Bands of *male* white, those of *female* orange.

*b*². Thorax yellow beneath, striped with white above:

2. *I. celebensis* Rothsch. from Celebes.

*b*¹. Wings deep blue, without bands:

3. *I. cyanea* Rothsch. from Biak Island.

b. Disc of hindwings with white, orange, or orange-red patch or band.

*c*¹. Underside of palpi yellow.

*c*². Patch to hindwings penetrating into the cell, broader than the black basal area of the wing:

1. *I. bernsteini* Voll. from Morty and Halmaheira. Bands of either sex orange.

A *male* from Gani, S. Halmaheira, captured by W. Doherty, has a much shorter band than our only Gilolo *female*; the latter is identical with a *female* from Morty (Morotai) and agrees well with Vollenhoven's figure, which represents a *female*.

*d*². Patch to hindwings bandlike, not touching cell, narrower than black basal area of wing:

5. *I. bernsteini angustiplaga* Rothsch. from Batjan.

*d*¹. Palpi black, usually with white scales at the outside.

*e*². Patch of hindwings penetrating into the cell, broader than the black basal portion of the wing:

6. *I. longipalpis* Kirsch from Dutch New Guinea. In the *male* the band to the forewings is mostly less oblique than in the *female*; the band reaches sometimes from the costa to beyond the submedian vein, while in other specimens it reaches only from near the subcostal nervure to the lower median nervule; mostly the band is broadest in the middle, as in *I. saturata* (Wlk.), but there occur also examples with the band being anteriorly of even breadth and gradually tapering off behind.

*f*². Band of hindwings not touching cell, narrower than the basal black area:

7. *I. meeki* Rothsch. from Fergusson Island. K. J.

Fleta Jord. gen. nov.

♂ ♀. Differs from *Iamaetalia* Jord. in the second joint of the palpi being clothed with long hairs, in the abdomen and femora being also hairy, especially strongly so beneath, and in the areole of the forewings being minute.

♂: hindwings clothed with hairs at the longitudinal median fold.

Type: *Fleta belangeri* (Guér.), Bélang. *Voy. Ind. Or.* p. 506. t. 5. f. 3 (1834) (Java).

Easily recognised by the minuteness of the areole, which latter is often reduced to a point. In *F. belangeri* vein 5 of the hindwings stands nearer to 4 than to 6, its base being distinctly depressed. *Agarista moorei* Feld., *Reise Novara* II. *Lep.* t. 107. f. 4 (1874) (Java), finds its place for the present best in this genus, though it has vein 5 of the hindwings coming from the middle of the discocellulars. *F. moorei* (Feld.) is distinguished, besides the position of that vein, by vein 2 of the forewings standing nearer to 3 and by the black border to the hindwings above being broadest in front, while in *belangeri* it is widest behind.

In the type-specimen of *F. moorei* (Feld.) vein 11 of the left forewing is connected with the areole by a bar, so that there are two areoles.

This genus is highly inconvenient as regards the delimitation of the family of *Agaristidae* (see p. 25). K. J.

Exsula Jord. gen. nov.

♂ ♀. Forehead without a conical processus. Third joint of palpi somewhat shorter than in *Immetalia* Jord.; second joint hairy, the hairs as long as, or longer than, the terminal joint. Femora hairy.

Neuration: forewing nearly as in *Immetalia* Jord., but with the second partition of median nervure longer than the respective portion of outer margin. Upper discocellular veinlet of hindwing straight, the second one concave or nearly straight; vein 3 close to 4, but not stalked with it; vein 5 only slightly longer than the median cell (measured from base of wing to middle of discocellulars).

Type: *Exsula dentatrix* (Westw.), *Cab. Or. Ent.* p. 68. t. 33. f. 5 (1848) (Assam). Distinguished from *Chelonomorpha* Motsch. especially by the absence of a conical processus from the forehead; from *Immetalia* Jord. by vein 2 of the forewings being remote from 3, and by the hairy first and second joints of the palpi; from *Fleta* Jord. by the position of vein 3 of the forewings again, by the much larger areole and the straight upper discocellular veinlet to the hindwing. The cell of the hindwings is longer than in the allied genera.

Besides *dentatrix* Westw. two more species come in this genus: *E. victrix* (Westw.) and *orientalis* (Butl.). Our series of *E. victrix* (Westw.) confirms Hampson's statement, *Moths of India* II. p. 150. n. 1556 (1894), that *silhetensis* (Butl.) and *tyrianthina* (Butl.) are not specifically different from *victrix* (Westw.). K. J.

Crinala Jord. gen. nov.

♂. Palpi hairy, except third joint; the latter very short, about half as long again as broad (♂). Forehead with obsolete circular ridge, without conical processus. Tibiae naked. Hindwings above clothed with hairs except near outer margin.

Neuration: forewings with the areole longer than half the breadth of cell at apex; vein 3 from before hinder angle of cell, 4 nearer to 5 than to 3; second partition of median nervure longer than the respective portion of the outer margin. Hindwings with veins 3 and 4 close together, but not stalked; second partition of median nervure longer than lower discocellular veinlet; discocellulars together slightly curved.

Type: *Crinala mimetica* Rothsch. sp. nov.

The short terminal joint of the palpi, and vein 3 of the forewings standing a millimetre short of the apex of the cell, distinguish this genus at once from its allies. K. J.

12. **Crinala mimetica** Rothsch. sp. nov.

Male. *Upperside:* forewings blackish brown, with the usual blue spots in cell and on discocellulars. All the discoidal and median nervules, and the subcostal, are white from the cell to about half their length; there is a white streak on the submedian fold, and another on the submedian vein. These streaks form a band similar to that of *Massaga monteirona* Butl. and *Phasis radians* (Feld.); this resemblance induces me to call the insect *mimetica*, though, of course, it is not a case of so-called "mimicry." Hindwings dark brown, with a distinct velvety black gloss produced by long hairs. There are some very faint submarginal white lines on the nervures, and the fringes of both pairs of wings are white, slightly sprinkled with black scales, mostly on the front wings.

Underside: forewings chocolate-brown, with faint traces only of white scales on the nervules. Hindwings as above.

Hinder edge of head, collar, palpi, except third joint, all coxae, four anterior femora, underside of anterior tibiae and of abdomen orange; rest of body bluish black.

Expanse: forewing AM 26 mm.; EM 17 mm.; PM 20 mm.
„ hindwing „ 20 „ ; „ 17 „ ; „ 13 „

Hab. N. Luzon (John Whitehead); 1 ♂. W. R.

Crinocula Jord. gen. nov.

♂ ♀. Palpi hairy; hairs of third joint, which is about half as long again as broad, sparse and shorter. Eyes clothed with hairs. Forehead devoid of a conical processus. Femora and abdomen, especially beneath, rough with long hairs.

Neuration: forewings with minute areole; vein 3 close to 4; second partition of median nervure shorter than the respective portion of outer margin. Hindwings with second partition of median nervure scarcely as long as the lower discocellular veinlet, which is slightly longer than the upper one and is more oblique; veins 3 and 4 from angle of cell.

Type: *Crinocula kinabaluensis* Rothsch. sp. nov.

Distinguished from all Agaristids known to me by the hairy eyes. K. J.

13. **Crinocula kinabaluensis** Rothsch. sp. nov.

Male and Female.—*Upperside:* forewings black, with very faint indications of the usual blue spots. A very narrow oblique band of cream-colour crosses the forewing just outside cell from the costal vein to the lower median nervure. Hindwings black, with a large discal rufous orange patch extending from about centre of cell to halfway between cell and outer margin, and from abdominal margin to near costal vein; this patch is rounded anteriorly, and emarginate behind lower median vein.

Underside as above, but band of forewings extends farther and is half as wide again, and at the base are white scales and retinaculum is yellow, while discal patch of hindwings extends to the base, where it is paler, and reaches anteriorly from the base to middle of costa.

Upperside of head and thorax black, with many grey hairs. Palpi whitish, as also a ring round eyes. Rest of body below yellow, including legs. Abdomen above darker yellow, with black middle line. Claspers of ♂ entirely black.

Expanse: forewing AM 18 mm.; EM 11 mm.; PM 13 mm.
„ hindwing „ 13 „ ; „ 12 „ ; „ 10 „

Hab. Kina Balu, N. Borneo; 1 ♂, 1 ♀ (obtained from Messrs. Staudinger & Bang-Haas) W. R.

Scrobigera Jord. gen. nov.

♂ ♀. Forehead without distinct conical processus. Palpi hairy, except terminal joint, which is more than three times as long as broad. Femora hairy.

♂ with a longitudinal middle fold to the hindwings densely filled with long hairs; anal segment very large.

Neuration: forewing with vein 3 arising before the apex of cell: interspace between 3 and 4 twice as wide as that between 4 and 5. Discocellular veinlets to hindwings arched, forming together an angle the point of which is directed towards the outer margin; vein 5 originating from this point; the fold of median cell is forked, and by joining the discocellulars circumscribes together with them a rhomboidal space: veins 3 and 4 either together from angle of cell—*amatrix* (Westw.), or 3 before the apex of cell—*clymene* (Boisd.).

Type: *Scobigera amatrix* (Westw.), *Cab. Or. Ent.* p. 68. t. 33. f. 4 (1848) (Assam).

Easily recognised by vein 3 of the forewings arising before apex of cell, and by the peculiar form of the discocellulars of the hindwings.

Other species of this genus are:—

Scrobigera albomarginata (Moore), *flaviciliata* (Boisd.), *semperi* (Feld.), *clymene* (Boisd.), *hesperioides* (Wlk.), and *vulcania* (Butl.). *S. albomarginata* (Moore) and *opheltes* (Druce) (syn.: *candidemarginata* Pouj.) are not separable as species, as there exist all intergradations between the two forms; the Andaman specimens have apparently the white border never so wide as it occurs amongst Burmese examples; *opheltes* (Druce) has to stand as aberration of *albomarginata* (Moore).

S. flaviciliata (Boisd.) is unknown to us.

With *S. semperi* (Feld.) (1874), based on a *female*, Swinhoe's *milionata*, *Cat. Lep. Het. Oxf.* I. p. 162. n. 754. t. 5. f. 2 (1892), described from a *male*, is identical.

S. clymene (Boisd.) varies considerably in the size of the markings on the forewing: in the Java specimens the two median spots are usually well separated at the median vein, but sometimes they touch one another; in Malacca specimens the spots are slightly separated; in Burmese and Assamese examples the spots form an uninterrupted, but at the veins constricted, band: these latter specimens are Walker's *proxima*, which I must treat as a subspecies of *clymene* (Boisd.).

The spot in the apical half of the forewing of *S. clymene* (Boisd.) has disappeared from the upperside in the Bornean representative, which I identify with Butler's *pulchra*, *Ann. Mag. N. H.* (4). XV. p. 143. t. 13. f. 4 (1875). Butler gives as habitat of *pulchra* Muhrut, India; Hampson, *Moths of India* II. p. 150 (1891), writes "? Meerut." In the Tring Museum are certain *females* from Borneo which agree very well with the figure and description of *pulchra*. The fringe of the hindwings of *pulchra* is said to be white; none of our specimens have it entirely white, but our series of *S. clymene* (Boisd.) includes examples with the fringe all white and others with the fringe all black, so that the extent of white at the fringe is certainly not of specific value in these forms. Therefore I do not hesitate to consider the habitat "Muhrut, India," as erroneous, the more so as the British Museum did not receive the type of *pulchra* directly from the collector, but got it as a "second-hand specimen."

On the underside of the forewings of *pulchra* there is only one band as above, or there appears another, short and linear, band outside the cell between the subcostal and upper median veins, either well marked or faint, separated from the median band or connected with it in front and behind; in one *female* this additional

band, which corresponds to the subapical short band on the upperside in *clymene* (Boisd.), is represented above by a number of white scales, and this confirms my opinion that *clymene* and *pulchra* are very closely allied insects and perhaps will be proved one day to be geographical forms of the same species.

The *males* in the Tring Museum vary, moreover, in the length and width of the orange-red patch to the hindwings. In one *male* the portion of the patch before the longitudinal fold is reduced to a point, in a second specimen it is a little larger, and in a third it is still larger and of half the size of that in Oberthür's figure of his *Epistème staudingeri*, *Et. d'Ent.* XIX. p. 22. t. 3. f. 15 (1894) (Kina Balu), and increases in other examples gradually till it reaches the size of the patch of Oberthür's figure. The *male* specimens with the patch to the hindwings smallest agree well with some North Bornean *females* in our collection, which themselves do not differ from Swinhoe's figure of the type of *S. hesperioides* (Wlk.) in *Cat. Lep. Het. Oxf.* I. p. 162. t. 5. f. 3 (1892). Though we have in the Tring Museum no intergraduates between *hesperioides* (Wlk.) and *pulchra* (Butl.) in the *female* sex, but only in the *male* sex, I must treat the examples with large orange-red patch to the hindwings and those with a small patch as mere aberrations of one species, of which the eldest name is *hesperioides* (Wlk.). The synonymy of *S. hesperioides* (Wlk.) is therefore as follows:—

Scrobigera hesperioides (Wlk.).

Eusemia hesperioides Walker, *Journ. Linn. Soc. Lond.* VI. p. 86 (1862) (Sarawak).
♀. *Eusemia tricolor* Butler, *Ann. Mag. N. H.* (4). XV. p. 142 (1875) (Sarawak).

ab. *pulchra* (Butl.); patch to hindwings broader than in the typical form.

♀. *Eusemia pulchra* Butler, *l.c.* p. 143. t. 13. f. 4 (1875) ("Muhrut, India," *loc. err.*).
♂ ♀. *Eusemia staudingeri* Oberthür, *Et. d'Ent.* XIX. p. 22. t. 3. f. 15 (♂) (1894) (Kina Balu).

K. J.

14. **Scrobigera niveifasciata** Rothsch. sp. nov.

Female.—*Upperside:* all four wings black; anterior pair with an oblique white transverse band crossing the wings from the costa almost to the inner angle, stopping short just on the submedian nervure. This band is straight and crosses the cell 1 millimetre short of the apex, and has a breadth of 3 millimetres at each end and 2 on the disc; one blue spot on discocellular nervules and another inside the band. Fringe white at apex of anterior and posterior wings.

Underside same as above, the band being identical in shape and position, but the two blue spots absent.

Head, thorax, and abdomen above black; head edged all round with white ring; palpi, legs, and middle of underside of abdomen orange, slightly sprinkled with brown on top joint of palpi and upperside of tibiae and tarsi.

The hindwings are suddenly emarginate between lower discoidal and upper median nervures.

Expanse: forewing AM 32 mm.; EM 20 mm.; PM 24 mm.
„ hindwing „ 24 „ ; „ 21 „ ; „ 15 „

Hab. "Borneo"; 1 ♀ (ex Coll. Felder).

This species differs especially from *semperi* (Feld.) in the much narrower band to forewings, which is the same above and below and is white instead of orange, by the absence of the blue gloss to hindwings and abdomen, by the less extent of white fringe to hindwings, and by the entirely yellow legs and underside of abdomen. W. R.

15. **Burgena chalybeata** Rothsch. sp. nov.

Male.—*Upperside:* forewings black, with an intense and brilliant blue gloss in side light, washed over with a glittering metallic fiery sheen. A little away from the base there is a band of lavender-blue, 6 millimetres wide at the costal and 4 at the inner margin. Hindwings same colour, but without markings.

Underside: forewings as above, but bar wanting, and three small spots of pale blue, one in apex of cell, the two others bordering apex of cell.

Palpi black with a white side line; head black with white border to eye. Hairs of coxae and femora ochraceous; rest of body black with a blue gloss.

Expanse: forewing AM 22 mm.; EM 14 mm.; PM 15 mm.
„ hindwing „ 15 „ ; „ 13 „ ; „ 10 „

Hab. New Britain (Capts. Cotton & Webster); 1 ♂. W. R.

16. **Burgena amoena** Rothsch. sp. nov.

Female.—*Upperside:* forewings similar to *B. chalybeata* mihi, but the metallic sheen more green and less fiery: a pale blue spot beyond the centre of cell; a discal bandlike patch crosses the wings between the subcostal vein and the inner margin, 4 millimetres wide in centre, which is white, while at each end the band is pale blue. Hindwings unicolorous, deep greenish blue, as in *chalybeata*.

Underside as above, but the gloss is much less strong and the spot in cell is not round but linear, and the bandlike patch is of uniform width, while above it is much constricted towards the subcostal vein.

Palpi, head, thorax, legs, and abdomen as in *chalybeata*, as is expanse.

Hab. Kinnigunang, New Britain (Ribbe); 1 ♀.

I have described this species as distinct from *chalybeata*, because in the genus *Burgena* no case of sexual dichromism is known: and certainly there is in the family *Agaristidae* no such extreme case as this would be. W. R.

Cruria Jord. gen. nov.

♂ ♀. Forehead with a conical processus bearing a strong circular ridge. Antennae slender, very feebly thickened between middle and tip, scarcely longer than half the length of the forewing. Terminal joint of palpi naked, at least four times as long as broad; rest of palpi hairy, but hairs not longer than third joint. Legs very slender, tibiae naked.

Neuration: forewings with vein 10 nearer to 9 than to the areole; vein 3 from below apex of cell, 4 nearer to 5 than to 3; second partition of median nervure longer than the respective portion of the outer margin. Hindwings with both discocellulars oblique; vein 3 distinctly from before angle of cell; second partition of median nervure of the length of the lower discocellular veinlet.

Type: *Cruria donowani* (Boisd.), *Voy. Astrolabe, Lép.* p. 176. n. 7 (1832) (Australia).

Easily distinguished from *Phalaenoides* Lewin by vein 10 of the forewings being stalked with 8 and 9. The *females* are generally darker than the *males* in this genus, and seldom have the costal margin of the forewings ochreous, as it is in the *males*.

I refer to *Cruria* the following species: *donowani* (Boisd.), *neptioides* (Butl.), *darwiniensis* (Butl.), and *tropica* (Luc.), *Proc. Linn. Soc. N. S. W.* (2). VI. p. 302 (1891) (Tropical Queensland).

With *C. tropica* (Luc.) is identical *Agarista platycantha* Meyr., *Tr. R. Soc. S. Austr.* XIV. p. 194 (1891) (Queensland).

Meyrick, *l.c.*, mentions an *Agarista kochi* which I fail to find published anywhere.

William Doherty obtained a pair of *Cruria donowani* (Boisd.) in Dili, Timor, in May 1891, which agree so well with typical *donowani* that we cannot even subspecifically separate them from Australian examples. K. J.

Comocrus Jord. gen. nov.

♂ ♀. Forehead with a short conical processus bearing a circular ridge. Palpi with long hairs, except third joint, which is about four times as long as broad. All the tibiae tufted with long hairs. Breast and abdomen rough with long hairs.

Neuration: forewings with vein 10 from nearer to 9 than to areole; vein 9 of about double the length of the stem of 8 and 9; vein 3 from a little before apex of cell, 4 nearer to 5 than to 3; second partition of median nervure longer than the respective portion of the outer margin. Hindwings with upper discocellular veinlet arched, shorter than the second one, which is oblique and straight; second partition of median nervure as long as lower discocellular veinlet; veins 3 and 4 from lower angle of cell.

Type: *Comocrus cortortus* (Wlk.), *Lep. Het. B. M.* XXXI. p. 45 (1864) (Australia).

Distinguished from the allied genera by the tibiae bearing long hairs at the outer edge; from *Agarista* Leach and *Phalaenoides* Lew. it differs in vein 10 to the forewings being stalked with 8 and 9, instead of coming from the areole as in those genera. K. J.

The Indo-Australian genera with vein 10 of the forewings being stalked with 8 and 9 can be distinguished as follows:—

a. Third joint of palpi twice as long as broad, or shorter.
  a^1. Eyes clothed with hairs. *Crinocula* Jord. gen. nov.
  b^1. Eyes naked. *Crinala* Jord. gen. nov.
b. Third joint of palpi three (or more) times as long as broad.
  c^1. Middle and hind tibiae with long hairs. *Comocrus* Jord. gen. nov.
  d^1. Middle and hind tibiae without long hairs.
    a^2. Veinlike fold within cell to hindwings forked, joined to the discocellular veinlets, and encircling together with them a rhomboidal space. *Scrobigera* Jord. gen. nov.
    b^2. Veinlike fold not forked.
      a^3. Forehead with a conspicuous truncate cone.
        a^4. Abdomen above at base with tuft of hairs; discocellular veinlets to hindwings deeply concave, lower one longer than the second partition of the median nervure. *Chelonomorpha* Motsch.
        b^4. Abdomen above at base without tuft of hairs; discocellular veinlets to hindwings feebly incurved; lower discocellular nervule not longer than the second partition of the median nervure. *Cruria* Jord. gen. nov.
      b^3. Forehead convex, without conical processus.
        c^4. Antennae only one-fifth shorter than the forewing. *Burgena* Wlk.
        d^4. Antennae one-third shorter than the forewing.

a^4. Second joint of palpi with short hairs. *Immetalia* Jord. gen. nov.

b^5. Hairs of second joint of palpi as long as third joint.

a^6. Second partition of median nervure to forewings longer than the respective portion of the outer margin. *Exsula* Jord. gen. nov.

b^6. Second partition of median nervure to forewings shorter than the respective portion of the outer margin. *Fleta* Jord. gen. nov.

Some more genera will in future come in this group, one for *Agarista darna* Druce, *Ann. Mag. N. H.* (6). XIV. 22 (1895), and another perhaps for *Aegocera tripartita* Kirby, which species has, according to Hampson's figure in *P. Z. S.* 1892. p. 191, vein 10 of the forewings stalked with 7, 8, and 9.

About *Hecatesia* Boisd. see p. 51. K. J.

f. American forms with vein 10 of the forewings stalked with 8 and 9.

Here belong only three genera: *Othria* Westw., with *O. angius* (H. S.) as type, *Euschirropterus* Grote, and a new one.

Othria amalthea (Dalm.) and *columbina* Westw. have vein 10 of the forewing arising from the areole, according to Westwood, and belong therefore to the genus *Phasis* Wlk.

Of *Euschirropterus poeyi* Grote we have a *male* from Jamaica, captured by C. B. Taylor, which agrees with our only Cuban specimen, but is somewhat smaller.

Laquea Jord. gen. nov.

♀. Forehead as broad as the eyes are high, faintly narrowed behind (♀), convex, without horn, but with subcircular ridge. Antennae slender, slightly thickened towards tip, joints well marked under a lens. Second and third joints of palpi with long hairs, third joint about twice as long as broad (♀). Middle and hinder tibiae with long hairs at the outer side. First joint of posterior tarsi visibly curved.

Neuration: forewings with vein 10 stalked with 8 and 9, stalk short; 9 originating much nearer to 10 than to middle of 8; 6 from areole, not from cell; second partition of median nervure of the length of the respective portion of the outer margin. Hindwings with second partition of median nervure of half the length of the lower discocellular veinlet.

Type: *Laquea argentata* (Druce), *Ann. Mag. N. H.* (6). XIV. p. 23 (1894) (Mexico).

Comes nearest to *Euschirropterus* Grote, but is easily distinguished by vein 10 of the forewing originating between areole and vein 9, whereas in *Euschirropterus* Grote vein 10 branches off from 9 as in *Hecatesia* ♂, which is quite an exception amongst the *Agaristidae*. *Euthisanotia* Hb., to which genus *argentata* has been referred by the author, has vein 10 arising from the areole.

We have only Jamaica specimens before us, which agree very well with typical *argentata* from Central America, except in the border to the hindwings being slightly narrower near the anal angle than in Druce's specimens.

Laquea argentata (Druce) bears a rather close resemblance to *Copidryas gloveri* G. & R., which species has, however, a long frontal horn and vein 10 arising from the areole. K. J.

2. *Vein* 10 *of forewings arising from areole* (for 1 see p. 30).

Here come more than half the number of the species of *Agaristidae*, and most of the species seem structurally so closely allied that it is very difficult to give a delimitation of the genera.

g. Africa forms with vein 10 *from the areole.*

Hampson, *Moths of India* II. p. 149 (1894), differentiates *Aegocera* Latr. and *Mimeusemia* Butl. from the other Indian *Agaristidae* by the absence of vein 5 from the hindwings. This statement, I think, is erroneous. In all our specimens of *Aegocera* and *Mimeusemia* that vein is present. Karsch's Aethiopian genus *Aegoceropsis*, *Ent. Nachr.* 1895. p. 348, said to be distinguishable from *Aegocera* Latr. by the presence of vein 5 on the hindwings, must accordingly sink as a synonym.

Aegocera norma Karsch, *l.c.*, is, as the author has already suggested, the same as *A. affinis* Druce, *Ent. M. Mag.* XX. p. 155 (1883), according to the description and figure of *norma* and the type-specimen of *affinis* Druce. The middle and hinder tibiae of *affinis* Druce and *ferrida* Wlk. are on the upperside clothed with long hairs.

In the Tring Museum is a *male* of *Misa memnonia* Karsch, *l.c.*, from Bathurst, West Africa, which agrees perfectly with Karsch's description and figure of the *female*, but has the white band on the forewings above of even width.

Of *Misa delicia* (Butl.), described as a *Massaga* and standing under this genus in Kirby's *Catalogue*, we have four *males* and three *females* from Accra, Gold Coast. These *females*, which structurally differ from the *males* in the slender and long terminal joint of the palpi, agree well with those described (as query *females* of *delicia*) by Aurivillius in *Ent. Tidskr.* 1892. p. 186, and confirm the statement of the learned author that in the *female* of *delicia* the outer edge of the band on the forewings is not strongly angulate, and that the band on the hindwings is wider than in the other sex.

Karsch, *l.c.*, p. 348, says of his new genus *Mitophrys*: "Vein 2 of the hindwings originating very close to vein 3." This statement, I think, is incorrect, as it does not apply to the type of the genus, *M. menete* (Cram.), the second partition of median nervure being longer than the lower discocellular veinlet in this insect, while in all the other species referred to *Mitophrys* by the author, as far as I could examine them, that partition is much shorter than the veinlet [*trimeni* (Feld.), *tricolor* (Druce), *tigrina* (Druce), *hilaris* Karsch]; *M. rubida* (Feld.) agrees in this respect with *menete* (Cram.). The forehead of the *males* of *Mitophrys* Karsch is said by Karsch to be narrowed behind. This, again, is not correct, as it does not apply to the type of the genus, *M. menete* (Cram.). Moreover, the narrowed forehead is met with in the *males* of several species which are referred by Karsch to *Aegoceropsis* Karsch = *Aegocera* Latr., namely in *A. norma* Karsch (type of *Aegoceropsis* Karsch, and = *affinis* Druce), *ferrida* Wlk., *obliqua* Mab., and also in the Indian *Aegocera bimacula* Wlk., not in *A. rendlia* (Cram.) and *rectilinea* Boisd. The third and last character by which *Mitophrys* is differentiated by the author from the allied genera is the slenderness of the antennae. As, however, the antennae of *Aegocera rendlia* (Cram.) and *rectilinea* Boisd. are in either sex decidedly thicker than in *A. ferrida* Wlk. and *obliqua* Mab., it is very difficult to draw a parting line between sections 13 and 18 of Karsch's key to the Aethiopian genera, and we are, in fact, quite at a loss to say whether the new species described below stands better in *Mitophrys* Karsch or in *Aegocera* Latr. There may be generic differences between the type-

species of *Aegocera* Latr., *Aegoceropsis* Karsch, and *Mitophrys* Karsch, but those which Karsch gives are partly not prominent enough (form of antennae), partly incorrect (absence of vein 5 from hindwings, narrowness of forehead in front of antennae in ♂, position of vein 2 to hindwings).

Aegocera elegantula Mab., *Ann. Soc. Ent. Belg.* 1893. p. 56; Mab. & Vuill., *Nov. Lep.* 12. p. 157. t. 22. f. 2 (1895), is nothing else but *A. trimeni* Feld. with the discal area of the hindwings pure white; in typical *trimeni* the hindwings are slightly tinged with orange: in *tricolor* Druce they are orange. These three forms occur together in Natal, and are certainly not specifically different, as intergradations prove.

Mitophrys fabricata Karsch, *Ent. Nachr.* 1895. p. 355. t. 2. f. 4, from "Nieder-Guinea," is based on a specimen of *Aegocera tigrina* Druce with the marginal region of the forewings black instead of reddish brown. In the figure of *tigrina* the thorax and base of abdomen are unicolorous; this is the case only in strongly rubbed specimens. *Tigrina* has the same dark thorax striped with white, and the same black dorsal line to the abdomen, which we find mentioned in the careful description of *fabricata*; but the abdomen of *fabricata* is said to be yellow with a black dorsal line: our good specimens of *tigrina* have the posterior segments black, edged with white. Judging from the photograph of the only specimen of *fabricata* which Karsch possessed when he described the species, this specimen is rather worn, and therefore the difference in the colour of the abdomen of *fabricata* and *tigrina* could very well be due to the bad condition of the type of *fabricata*. The markings of the forewings are in our series of thirteen specimens so variable that the differences shown in this respect by the figures of *tigrina* Druce and *fabricata* Karsch are of no importance whatever. One of our thirteen specimens has the marginal region of the forewings coloured like *fabricata* Karsch; all the others, mostly from the same place (Gaboon), have it like *tigrina* Druce. The small white spot between the lower median nervules to the forewings stands often isolated, as in the type of *tigrina* Druce; sometimes it is merged together with the subapical band, as in *fabricata* Karsch: and in one of our specimens it is absent. The linear white mark at the apex of the cell is in some cases three times as broad as in others. The submedian yellowish band is often dilated at the submedian nervure, as in Karsch's figure; sometimes it is of even breadth and does not reach that vein; in other examples it is club-shaped, as in Druce's figure. On account of the marginal region to the forewings being black, *fabricata* Karsch might be kept separate as an individual aberration of *tigrina* Druce, unless it could be proved by the presence of characters not mentioned in the description and not to be seen in the figure that it is distinct. K. J.

17. **Aegocera dispar** Rothsch. sp. nov.

Male.—All four wings black. Forewings with a minute white dot at the base. A triangular white patch one-fourth from the base extends obliquely from below the costa to the submedian vein, not quite 3 millimetres in breadth at the widest point. One-third from the apex the forewings are crossed by a second oblique white band, 2 millimetres in breadth, which extends from the costal nervure to the second median vein. Near the white basal dot below the costa is a small patch of blue scales; a linear spot of blue is situated just beyond the middle of the cell, and a longer one on the discocellular veinlets. There is also an indistinct blue line outside the subapical white band, and another along the lower median vein, a few scattered blue scales being also on the submedian vein. Hindwings with a large discal white

patch, which extends from near the base to half-way between the cell and the outer margin, gradually widening out as it approaches the margin; its outer edge is strongly convex, indented at the lower median vein, and is limited on one side by the subcostal vein and on the other by the submedian fold.

Underside of wings as above, but without blue scales.

Body black; palpi, except the black tip of first joint, head, prothorax, and a few hairs on each side of the anterior part of mesothorax, also anterior coxae and inner side of first pair of legs, golden orange.

Female.—Larger than *male*. Subbasal white patch almost or entirely wanting; hindwings black, and extreme tip of abdomen yellow.

Expanse: forewing, ♂, AM 20 mm.; EM 11 mm.; PM 14 mm.
„ „ ♀, „ 23 „ : „ 14 „ : „ 17 „
„ hindwing, ♂, „ 14 „ ; „ 13 „ ; „ 11 „
„ „ ♀, „ 17 „ ; „ 15 „ : „ 13 „

Hab. Wassein, E. Africa (Mathews, April 1889); 1 ♂, 3 ♀.

The antennae are thicker and in the ♂ less pointed than in *A. menete* (Cram.), but thinner than in *cenidia* (Cram.). Vein 2 of the hindwings stands as close to vein 3 as in *A. trimeni* Feld. The terminal joint of the palpi is shorter than in *menete* (Cram.). W. R.

18. **Hespagarista echione** Boisd. ab. **funebris** Rothsch. ab. nov.

Differs from typical *echione* Boisd. by the absence of the luteous spots on both pairs of wings. That this is only a melanistic aberration of *H. echione* is shown by the blue spots being in exactly the same position, and the luteous patches being indicated by scattered yellow scales. Head, palpi, legs, thorax, and abdomen identical with typical form.

Hab. Wassein, E. Africa (Mathews, April 1889): 1 ♀. W. R.

19. **Rothia simplex** Rothsch. sp. nov.

Female.—*Upperside:* forewings black, fringe at apex white. At apex of cell the forewings are crossed by an oblique band of creamy white extending from the subcostal to the submedian nervure. This band, at its widest part, has a breadth of 5 millimetres, and at the lower median nervule is 4 millimetres from outer margin. At the base of the forewings are situated a number of creamy dots and a dull dark metallic spot. Hindwings black, with fringe white at apex, and with large discal creamy patch exteriorly rounded, reaching the costal vein and the abdominal margin, where it is 3 millimetres short of the base. Along basal half of costa runs a creamy streak joined to the discal patch. Width of black border 9 millimetres at vein 7 and 4 millimetres at submedian.

Underside: forewings similar, but without the basal spots, and in one of my two specimens there is situated in the cell a round white spot, while from the base along the inner margin runs a streak of cream-colour. Hindwings as above, but discal patch extending to base and the black border extending along the costal margin to near the base.

Palpi, head, and thorax black, with two, four, and eight white spots respectively. Underside of thorax, legs, and abdomen orange-yellow; anal tuft and basal spot

above and below on the preanal segment black or nearly so, as well as the last abdominal segment on upperside.

Expanse: forewing AM 31 mm.; EM 17 mm.; PM 23 mm.
„ hindwing „ 23 „ ; „ 18 „ ; „ 15 „

Hab. Morondava, Madagascar (Last); 2 ♀.

Differs from *R. pales* (Boisd.), *R. epipales* (Mab.), and *R. micropales* Butl. in the large creamy discal patch on hindwings and the longer terminal joint of palpi. From *R. agrius* (H.S.) it is distinguished especially by the much larger creamy area to the hindwings and the entirely yellow upperside of the abdomen. W. R.

20. **Rothia lasti** Rothsch. sp. nov.

Male.—*Upperside:* forewings black, with one white dot at the base and two in the cell. From the subcosta to the lower median vein, a millimetre beyond the cell, is an oblique transverse white patch, the anterior half much narrower than the lower half. At the base of the wings are indications of the usual blue spots. Hindwings black, with a more or less rounded white discal patch between the subcostal and submedian veins, greatest width of which is about 5 millimetres. This patch is often indented along the veins.

Underside as above.

Palpi, head, and thorax black, with two, four, and eight white spots respectively. Black hairs of thorax slightly intermixed with orange ones; abdomen black. Hairs of thorax below and legs orange.

Expanse: forewing AM 19 mm.: EM 11 mm.; PM 15 mm.
„ hindwing „ 15 „ : „ 13 „ ; „ 10 „

Hab. Morondava, Madagascar (Last); 10 ♂, 3 ♀.

All the white markings vary much in size in the individual specimens. W. R.

21. **Rothia eriopis** H.S. ab. **carminata** Rothsch. ab. nov.

The yellow disc of hindwings of *eriopis* is in this aberration bright carmine-red. This is neither a local nor a sexual variation, as I have one *male* and six *females* of *carminata*, as well as two *males* and three *females* of typical *eriopis*, all from Morondava, Madagascar. W. R.

22. **Rothia nigrescens** Rothsch. sp. nov.

Male.—*Upperside:* forewings black and shaped and marked as in *R. simyra* Westw., but the indentations of white band at the veins are deeper, and there are one or two small creamy dots in cell. Hindwings black, the fringe spotted with white, as in *R. zea* (H.S.).

Underside as above, but distinguished at once from all other *Rothia* by the entirely black hindwings.

Palpi, head, and thorax black, spotted as in other *Rothia*. Upperside of abdomen black. Underside of body and legs orange; tarsi above black.

Expanse: forewing AM 27 mm.; EM 16 mm.; PM 18 mm.
„ hindwing „ 18 „ ; „ 15 „ ; „ 12 „

Hab. Morondava, Madagascar (Last); 3 ♂. W. R.

Arrothia Jord. gen. nov.

♀. Forehead with a thin conical horn raised obliquely forwards and sharply truncate at the tip; diameter of horn at tip scarcely one-eighth of the breadth of forehead. Antennae distinctly thickened beyond middle, with the extremity slender, a little thicker than those of *Aegocera tigrina* (Druce). Third joint of palpi naked, almost longer than the second joint (♀).

Neuration: vein 9 to forewings arising a little beyond middle of 8; veins 3, 4, 5 as in *Aegocera* Latr. and *Rothia* Westw. Second partition of median vein longer than the respective portion of the outer margin. Hindwings with veins 3 and 4 together from lower angle of cell; second partition of median nervure shorter than lower discocellular veinlet.

Type: *Arrothia bicolor* Rothsch. sp. nov.

Differs from *Aegocera* Latr. and *Rothia* Westw. in vein 9 of the forewings standing beyond middle of vein 8, instead of arising from between middle of 8 and areole, and in the thin and long horn of the forehead. From *Pais* Hübn. it is distinguished by the horn again, and by the long and naked third joint of the palpi; from *Paida* Jord. gen. nov. by the shape of the frontal horn, the position of vein 9 to the forewings, and by the shorter second partition of the median vein of the hindwings. K. J.

23. Arrothia bicolor Rothsch. sp. nov.

Female.—*Upperside:* forewings, basal half buffish yellow, reaching at costal margin 1 millimetre short of middle, while on inner margin it reaches one-fourth short of the inner angle; the outer edge of the yellow area is convex, and from base of wing to half its extent is much shaded with black scales; outer half of wing black. Hindwings similar, but yellow area less shaded with black scales, black area narrowest behind.

Underside of wings as above, but yellow area brighter and not shaded with black scales.

Antennae, palpi, head, underside of body, and last two segments of abdomen black; upperside of thorax orange and of abdomen yellow.

Expanse: forewing AM 20 mm.; EM 11 mm.: PM 15 mm.
„ hindwing „ 15 „ ; „ 13 „ ; „ 10 „

Hab. Morondava, Madagascar (Last); 1 ♀. W. R.

Arctiopais Jord. gen. nov.

♂ ♀. Forehead narrowed behind in ♂, almost parallel in ♀, anteriorly convex with a sharply raised circular ridge, of which the diameter is longer than a third the breadth of the forehead. Antennae thicker than in *Aegocera menete* (Cram.), thinner than in *Aegocera cenulia* (Cram.). Palpi long in either sex; second joint strongly hairy, third joint naked, about eight times as long as broad, of the length of the basal joint of the foretarsi in ♂ and ♀. In ♂ hindtibiae and -tarsi and long spurs of the former clothed with long hairs; in ♀ hindtarsi and long spurs of hindtibiae almost naked.

Neuration: costal nervure to forewing parallel to costal margin to a little beyond apex of cell, where it rather suddenly turns towards the margin; vein 10 arising from between middle and apex of areole; stem of 8,9 short; veins 3, 4, 5 as in *Aegocera* Latr. and *Rothia* Westw.; second partition of median nervure as long as the respective portion of the outer margin. Hindwings as in *Aegocera trimeni* Feld.

Type: *Arctiopais ambusta* (Mabille), *Bull. Soc. Ent. Belg.* XXV. p. 55 (1881) Madagascar).

Most nearly related to those species of *Aegocera* Latr. which have, in the *male*, the front of the head narrowed behind, but differs from them in the terminal joint of the palpi being in either sex of equal length and as long as the first joint of the anterior tarsi. The long terminal joint of the palpi of *A. ambusta* misled Mabille to describe the insect as a species of Hypsa Hb.!! The hinder tarsi and long spurs of the posterior tibiae being clothed with long hairs seems to be a character peculiar to this genus and the American genus *Euschirropterus* Grote. In *Aegocera trimeni* Feld. and *tigrina* (Druce) the basal joint of the hindtarsi bears in the *males* some long hairs on the upperside; in the *male* of the only species of the new genus all the joints are hairy, but less densely so than the hindtibiae. K. J.

Paida Jord. gen. nov.

♂ ♀. Forehead produced into a tripartite horn, of which the middle part is much longer than the two lateral parts, a little turned upwards and sharply pointed. Antennae thinner than in *Pais* Hübn. Palpi slender, first and second joints moderately hairy, third joint not hairy (as it is in *Pais*), long, four times as long as broad. Middle and hinder tibiae clothed with long hairs at the upper- and underside.

Neuration: vein 9 of forewings originating between areole and middle of vein 8; veins 3, 4, 5 as in *Aegocera* Latr.; second partition of median nervure longer than the respective portion of the outer margin. Hindwings with veins 3 and 4 together from lower angle of cell; second partition of median vein longer than the lower discocellular veinlet.

Type: *Paida pulchra* Trimen, *Tr. Ent. Soc. Lond.* (3). I. p. 524 (1863) (Damaraland). We have 2 ♂ from "South Africa" and a ♀ from Weenen, Natal (caught in January 1895) of this handsome insect.

Paida differs from *Pais* Hübn. in the structure of the head and the long and naked terminal joint of the palpi. From *Aegocera* Latr. and allies the new genus can easily be distinguished by the horn of the head. K. J.

24. Godasa rufodiscalis Rothsch. sp. nov.

Male.—*Upperside:* forewings chocolate-brown, passing into reddish chocolate towards the margin, covered with a number of small blue patches, especially one at the base behind the costa, one beyond the middle of cell, another on the discocellular veinlets, and three before the submedian vein. There are eight small white spots close to the outer margin, the last being the largest. Hindwings black, with a large discal patch, broadest at the abdominal margin, of a bright rufous colour. It extends anteriorly to the submedian vein. The outer black area of hindwings has a width of 2 millimetres at anal angle and 5 millimetres at the submedian vein; the inner edge of rufous patch is indented with black upon the discocellulars.

Underside black-brown. Forewings without any markings, and hindwings showing rufous patch very distinctly as above.

Head, palpi, thorax, legs, first, second, and last segments of abdomen, a series of dorsal and abdominal spots black; tip of first and second joints of palpi, three spots on the anterior tibiae, and tips of all tarsal joints white. Rest of abdomen yellow.

Expanse: forewing AM 20 mm.; EM 11 mm.; PM 14 mm.
„ hindwing „ 14 „ ; „ 11 „ ; „ 10 „

Hab. Madagascar; 1 ♂.

Easily distinguished from *Godasa sidae* (Fabr.) by the colour and pattern. W. R.

This species differs from *Godasa sidae* (Fabr.) structurally in vein 7 of the hindwings being joined to vein 8 in the ordinary way, as in *Episteme* Hübn., while in *sidae* the juncture of those veins takes place farther from the base and the veins remain close together for more than a millimetre. K. J.

h. Indo-Australian forms with vein 10 arising from the areole.

Agarista Leach, *Zool. Misc.* I. p. 37 (1815).

To this genus I refer only *A. agricola* Don. (as type of the genus), *biformis* Butl., *daemonis* Butl., and a new species described below by Mr. Rothschild. These species are characterised by the antennae being strongly clubbed in either sex, by all the femora being rough with long hairs, and by some peculiarities in the neuration:—

The upper discocellular veinlet of the forewings is strongly concave; the second partition of the median nervure is on the forewing much longer than the respective portion of the outer margin, and on the hindwing only half the length of the lower discocellular veinlet; vein 5 of the hindwings has the base feebly but visibly bent towards vein 6, while in the allied genera vein 5 is either straight at base or faintly curved towards vein 4. K. J.

25. Agarista timorensis Rothsch. sp. nov.

♂. Differs from *A. agricola* Don. in the subapical band of spots being white, not orange, and in the cellular patch being very narrow. The red band of the hindwings is replaced by a partly obliterated row of whitish spots. Underside shows same differences.

Hab. Oinainisa, Dutch Timor (W. Doherty, November and December 1891); 1 ♂.

Eventually, when we possess material from all the lesser Sunda and Papuan Islands, I feel sure *Agarista biformis* Butl., *A. daemonis* Butl., and my new *A. timorensis* will all have to rank only as subspecies of *A. agricola* Don., but at present no intergraduated forms are known. W. R.

Phalaenoides Lewin, *Lep. Ins. N. S. Wales* p. 2 (1805).

The species which are generically identical with *Ph. glycinae* Lew., the type of the genus, differ from *Agarista* Leach in the middle and hinder tibiae being clothed in *male* and *female* with long hairs in the middle on the upperside. In neuration *Phalaenoides* Lewin comes very close to *Agarista* Leach; the second partition of the median nervure to the forewings is, however, shorter, that of the hindwings longer than in *Agarista*, and vein 5 of the hindwings is at the base straight, or feebly bent backwards. The antennae are less clubbed than in *Agarista*, and in the ♀ much thinner than in the ♂. The tibiae are not so hairy in this genus as they are in *Zalissa* Wlk. [= *Sendyra* Stretch according to Hampson, *Moths of India* II. p. 155 (1894)].

Phalaenoides Leach contains a good many heterogeneous forms which ought to be removed from this genus. *Ph. funebris* (Moore) and *vithoroides* (Leech)—the latter stands under *Episteme* Hb. in Kirby's *Catalogue* p. 29. n. 51—have setiform antennae in both sexes, and the terminal joint of the palpi is very short; in these characters the two species (or are they geographical forms of one species?) agree with *Zalissa longipennis* (Wlk.). In *Ph. megisto* (Boisd.), *pamphilia* (Stoll), *goldiei*

(Druce), and the new species described below, the antennae are also not thickened towards apex, and these species differ, moreover, from typical *Phalaenoides* in the middle and hinder tibiae, though not naked, bearing no tuftlike clothing of long hairs in the middle. *Phalaenoides roeberi* (Ribbe), *milete* (Cram.), *natatus* (Wlk.), *confertus* (Wlk.), all under *Phalaenoides* in Kirby's *Catalogue*, and *Episteme pagenstecheri* (Röb.) of Kirby's *Cat.*, must be referred to *Ophthalmis* Hb. on account of the slender and naked middle and hinder legs which they have in common with *O. linea* (Cram.).

Phalaenoides affinis Boisd. will in future come into another (new) genus: the antennae are in the ♂ feebly, but visibly, biserially serrate; those of the ♀ appear to be simple and setiform, as in *Ph. funebris* Moore.

The *male* of *Phalaenoides albamedia* (Luc.), *Proc. Linn. Soc. N. S. Wales* (2). VI. p. 301 (1891) (Brisbane), has a peculiar stridulating organ which reminds one of that of *Hecatesia* Boisd., but is situate on the hindwings. Within and before the cell of the hindwings, along the subcostal nervure, the membrane of the wing is dilated, denuded on the underside, where it forms a deep furrow, covered with one layer of scales only on the upperside, and transversely ribbed like the vitreous mark in *Hecatesia* ♂; on the forewing there is before and behind the median nervure a similar, but much less developed, organ. By examining the legs of this species I found that the first joint of the hinder tarsi is much thicker in the ♂ than in the ♀, and is provided above, a little towards the inner side, with a row of obviously raised transverse ridges, which I did not meet with in the ♀, nor anywhere else amongst *Agaristidae*, and which, when pressed during flight against the ribbed membrane of the vitreous mark, might very well serve to produce a buzzing sound similar to that observed by Meyrick in *Hecatesia fenestrata* Boisd. (see Hampson, *P. Z. S.* 1892. p. 190). In consequence of the development of that stridulating organ the anterior part of the cell to the hindwings (between longitudinal fold and subcostal nervure) is broader than in other *Agaristidae*, and hence the upper discocellular veinlet longer than the lower one. Notwithstanding that in the other sex the stridulating organ is entirely absent, the lower discocellular veinlet to the hindwings is also here visibly shorter than the upper one, a character which one might suppose to be inherited from the *male*, or, as in the ♂ of *Ph. glycinae* (Don.) without stridulating organ the lower discocellular veinlet is likewise, though almost imperceptibly, shorter than the upper one, at least to be influenced by the presence, in ♂, of that vitreous mark.

Vein 5 of the hindwings of *albamedia* (Luc.) is parallel to vein 4; it is rather curved at two-thirds of its length from the outer margin, and thence becomes straight. The hindtibiae are without long hairs in the middle. The basal third of the costal margin of the forewings is in either sex more dilated than in any other species of *Phalaenoides* Lewin. The spines of the first joint of the hinder tarsi are less developed in the ♂ than in the ♀. K. J.

26. **Phalaenoides inconspicua** Rothsch. sp. nov.

Differs from *P. goldiei* (Druce), *Ann. Mag. N. H.* (6). XIV. p. 21 (1894), in the following characters:—

It is somewhat larger; the apices of both fore- and hindwings are black, not white. The oblique white patch on forewings is broader and has a strong projection at lower angle of cell; the small white spot in the cell is wanting, as are also the blue

dots at the base. On the hindwings the white discal patch is about three times the size of that in *P. goldiei*, and, unlike in that species, reaches the abdominal margin. Collar and shoulders edged with grey, not yellow; abdominal tuft black above, pale buff below, not entirely orange, as in *goldiei*. Underside of abdomen all white, not banded, as in the other species. Terminal joint of palpi shorter.

Hab. Humboldt Bay, Dutch New Guinea (W. Doherty, September and October 1892); 1 ♂. W. R.

In this species the second partition of the median nervure to the hindwings is of half the length of the lower discocellular veinlet. The antennae are not thickened towards the apex. The forehead is somewhat produced and bears a subcircular ridge. The third joint of the palpi is longer (♂) than the forehead is broad. K. J.

27. **Ophthalmis basalis** Rothsch. sp. nov.

Female.—*Upperside:* forewings differ from *O. mutatus* (Wlk.) in having a row of three white subbasal spots instead of two, and in the two central white spots being much larger, that between the lower median and submedian veins having a length of 4 and a breadth of 3 millimetres. Hindwings are at once distinguishable from those of all allied forms by the presence of a large white basal area: this area does not quite reach either the base or the apex of cell between costa and median vein, being here 5 millimetres wide, while between the median vein and abdominal margin it reaches from the base to within 5 millimetres of the outer margin at the lower median vein, including a black dot just behind the latter vein.

Underside shows a faint line connecting the lowest subbasal spot and the lower of the two central spots. Middle of underside of abdomen yellow; otherwise similar to *O. mutatus* (Wlk.). Size somewhat larger than that of *O. mutatus* (Wlk.).

Hab. Mangola, Sulla Islands (Dr. Platen); 1 ♀. W. R.

28. **Mimeusemia perakana** Rothsch. sp. nov.

♀. Differs from *M. albicilia* Hamps., *Moths of India* II. p. 160 (1894), in the more reddish maroon ground-colour of forewings, in the larger and more oblique subbasal white patch, which is more than twice as broad before submedian vein than at the costa; the two median patches are joined together to form an uninterrupted band. On the hindwings the baso-abdominal area is pure white, while the discal white spot is larger than in *albicilia* and on the underside is connected with basal area by a long white streak. Basal black patch on abdomen much extended.

Hab. Padang Rengas, Perak; 1 ♀. W. R.

Agarista semyron H.S. is most nearly related to the species standing under *Mimeusemia* Butl., and ought to be referred to that genus. *Mimeusemia* Butl. is scarcely separable from *Phalaenoides* Lewin in the present extent of the latter. In the typical species of *Mimeusemia*, in *M. persimilis* Butl. from Japan, the second partition of the median vein to the forewings is decidedly longer than in *peshwa* Moore and the other species.

Hampson, *Moths of India* II. p. 155 (1894), says of the genus *Zalissa* Wlk. (= *Scudgra* Stretch acc. to Hampson) that the terminal joint of the palpi is very short, and that the tibiae are without spines. The first character applies only to *Z. longipennis* Moore and perhaps some allied species, while in other species, for

example in *Z. noctuina* (Butl.) from Japan, the third joint of the palpi is very long; in the ♀ of *Z. transiens* (Wlk.) it is at least four times as long as broad, and can, therefore, by no means be called short. The second character, if its meaning is "tibiae without spurs," is stated by mistake, I think; all the species of *Zalissa* which we have possess the usual spurs to the tibiae. The position of vein 7 to the forewings, which Hampson has incorrectly made use of in the key to the Indian genera of *Agaristidae*, is variable in *Zalissa*; it originates either from the apex of the areole, or, in specimens of the same species—*f. e. transiens* (Wlk.) is stalked with 8 and 9. K. J.

Longicella Jord. gen. nov.

♂ ♀. Forehead with a short conical truncate processus; diameter of subcircular ridge one-third or less the breadth of forehead. Antennae feebly thickened towards apex in ♂, almost filiform in ♀, with the tip very slender. Second joint of palpi with the hairs not longer than the third joint; the latter naked, longer than the forehead is broad, about four times as long as broad. Middle and hind tibiae not clothed with long hairs.

Neuration: vein 3 of forewings from before angle of cell; second partition of median nervure longer than the respective portion of the outer margin. Hindwings with vein 3 also from before angle of cell; second partition of median nervure longer than the lower discocellular veinlet; vein 5 shorter than the cell is long.

Type: *Longicella mollis* (Walker), *Lep. Het. B. M.* VII. p. 1774 (1856) (East Indies and Malacca).

Differs from all allies in vein 3 of either wing arising from before the apex of the cell, and in vein 5 to the hindwings being shorter than the median cell is long (measured along the middle fold).

L. decipiens (Butl.), *Ann. Mag. N. H.* (5). XIV. p. 34 (1884) (Nias), is only a subspecies of *L. mollis* (Wlk.) and occurs in Nias and Sumatra: the extent of the black spots is so variable that *mollis* and *decipiens* run into one another.

L. luctifera (Boisd.), *Spec. Gén.* I. t. 14. f. 4 (1836) (Java), belongs in this new genus; it has at first sight a different appearance, but the markings correspond in position very well with those of *mollis* (Wlk.). K. J.

Hecatesia Boisd., *Mon. Zyg.* p. 11 (1829).

The figures which Westwood, *Trans. Linn. Soc. Lond.* (2). I. p. 199. t. 33. f. 1 *e* (1877), and Hampson, *P. Z. S.* 1892. p. 190. f. 2, give of the peculiar neuration of the *male* of *H. fenestrata* Boisd. do not agree with one another. I have compared our eighteen *male* specimens of *fenestrata* Boisd. and *thyridion* Boisd., and find that both figures are incorrect, and that Westwood's figure comes nearer the truth than Hampson's does. In Hampson's figure *H. fenestrata* Boisd. has no areole, veins 6, 7, 8, and 9 are stalked together, and 10 is free; Westwood's figure shows correctly the long areole, but the position of veins 6, 7, and 8, and that of the upper discocellular veinlet, are erroneous. According to our specimens, the *males* of *fenestrata* and *thyridion* have a very long and narrow areole, reaching from close to the origin of vein 11 to beyond the apex of the cell; vein 11 arises much nearer the base of the wing than is shown in Westwood's figure. Veins 7 and 8 come from the apex of the areole, 9 and 10 are stalked together (not with 8); vein 6 arises from apex of cell.

not from areole; middle part of discocellular veinlets between veins 5 and 6 is obliterated in our specimens, or is at least so feeble that I cannot see it under a strong lens.

Two *female* specimens of *Hecatesia fenestrata* in our collection, and a specimen of this sex of *thyridion* in Mr. Herbert Druce's collection, show that the neuration in Westwood's figure of the *female* of *H. thyridion* (*l.c.* t. 33. f. 4) is so far correct, as vein 10 arises from the areole and 8 and 9 are stalked together.

The antennae of *thyridion* Boisd. are much more pointed than those of *fenestrata* Boisd.; the terminal joint of the palpi is longer and naked. The terminal joint of the palpi of *fenestrata* is much too short in Westwood's figure.

Hecatesia Boisd. is placed by Kirby in his *Catalogue* at the end of the *Castniidae*: in this Kirby follows Westwood, *l.c.*, who pointed out, in opposition to Boisduval, that *Hecatesia* was much more nearly allied to *Castnia* Fbr. than to *Eusemia* Dalm. and *Aegocera* Latr. Westwood was, however, entirely wrong, and Boisduval, Druce, Hampson, etc., were and are right in treating *Hecatesia* as an Agaristid. *Hecatesia* disagrees with *Castnia* nearly in every respect, while there is nothing in its structure which might justify one in removing it from the typical Agaristids.

The American insect described by Druce as *Hecatesia falcata*, *Biol. Centr. Amer., Lep. Het.* I. p. 35. t. 5. f. 23 (♂). 24 (♀) (1883) (Panama), must certainly be referred to another (new) genus. As we have, however, no *females* of this *falcata*, I abstain from proposing a genus for it, but give the following note on the structure of the *male*:—

Differs from *Hecatesia* Boisd. as follows: terminal joint of palpi shorter; antennae gradually thickened, much less abruptly clubbed; all the tibiae clothed with long hairs; hinder wings with the abdominal region dilated (recalling the hindwing of *Euploea*).

Neuration: areole short and extremely narrow; vein 10 from areole, not stalked with 9; veins 8 and 9 stalked together; second partition of median nervure twice as long as the respective portion of the outer margin; same partition on hindwings longer than lower discocellular veinlet. As the veins near the anterior angle of the cell to the forewings are so close together that a simple woodcut would not give a right idea of the position of veins 10, 9, 8, and 7, and the form of the inconspicuous areole, we propose to give a figure of the venation on one of the plates of this journal when an opportunity occurs.

The stridulating organ on the forewings of *H. falcata* Druce is scaled on either side of the wing. K. J.

Haase, *Iris* I. p. 323 (1888), says of the peculiar organ on the forewing of the *male* of *H. fenestrata* Boisd. that probably in the live specimen the thickened costal margin approaches the scaled portion of the wing by means of the vitreous membrane being depressed, and that it is removed by the wing being excessively spread out when the specimen is set. This is erroneous; unset specimens have the vitreous mark the same as set specimens. Haase, regarding this stridulating organ as being a scent-producing one, had to find a fold for scent-producing scales. K. J.

i. American forms with vein 10 *of the forewings arising from the areole.*

Agarista sabulosa Feld. from California and *A. noctuiformis* Möschl. from Porto Rico, both with (?) under *Metagarista* in Kirby's *Catalogue*, are very closely allied if

not identical insects. They have, of course, nothing to do with the genus *Metagarista*, and agree with none of the present genera of *Agaristidae*, and will require a genus of their own. They differ structurally from *Copidryas* G. & R., to which genus they come nearest, in the forehead bearing a short conical processus with circular ridge and being narrower than the eyes are high (when viewed from front side), and in the second partition of the median nervure to the hindwings being shorter than the lower discocellular veinlet. In the *male* of *sabulosa* Feld. and *noctuiformis* Möschl. the forehead is narrowed behind as in *Aegocera trimeni* Feld. and allies. K. J.

Diamuna Walker, *Lep. Het. B. M.* XII. p. 960 (1857).

We have two *female* specimens (from Venezuela and British Guiana) of an Agaristid which is apparently the same as *Diamuna sevora* (Stoll), *Pap. Ex.* IV. p. 235. t. 398. f. *l* (1782) (Surinam), though they have not the peculiar patch on the forewings as shown in Stoll's figure. They exhibit the following structural characters which I think necessary to point out, as Walker's diagnosis of *Diamuna* is a very vague one :—

♀. Front of the head a half narrower than the large eye (when viewed from the front side) is high, conically produced, with a sharp subcircular ridge. Palpi strongly hairy, terminal joint scarcely longer than broad. Antennae almost filiform, not reaching apex of cell to forewings; dilatation towards apex scarcely noticeable. All the tibiae strongly hairy.

Neuration: similar to that of *Phasis* Wlk., but second partition of median nervure to forewings half as long again as the respective portion of the outer margin; same partition to hindwings longer than lower discocellular veinlet. Vein 7 to hindwings, though touching 8, distinctly separate from 8 by a furrow, its basal partition thicker than in *Phasis* Wlk. and most other Agaristids.

Differs from *Phasis* Wlk., to which *Diamuna* Wlk. comes nearest, in the thin antennae, the narrower forehead, the larger eyes, the longer second partition of the median nervure to either wing, the hairy middle and hind tibiae, and in vein 7 to the hindwings being thicker at base and being separate from 8 by a furrow when touching it. K. J.

Clitis Walker, *Lep. Het. B. M.* XII. p. 961 (1857).

A ♂ specimen without locality in the Felder collection agrees fairly well with Stoll's figure of *Clitis proserpina* (Stoll), *Pap. Ex.* IV. p. 239. t. 399. f. *i* (1782) (Surinam). It has the short and thin antennae of *Diamuna* Wlk., and is similar to that genus in the form of head and eyes, and in the long second partition of the median nervure: but vein 7 of the hindwings is confluent for about 1 millimetre with vein 8 *beyond* the basal third of the cell; the basal partition of vein 7 is well developed.

In the narrow forewings and broad hindwings *Clitis proserpina* (Stoll) reminds one of *Hecatesia falcata* Druce. The underside of the abdomen is in our ♂ specimen clothed along either side with long hairlike scales, which are broadest at the tips, and being turned over the middle of the abdomen give the underside of the latter a strongly woolly appearance. The hindwings are furnished above at the basal portion of the costal margin with long hairs, covered by the abdominal margin of the

forewings, which is hairy underneath; these hairs represent probably a secondary sexual character analogous to that of *Patula* Guen. K. J.

Group III.—*Antennae pectinate or serrate; forewings with areole.*

k. Africaa forms.—Here belong *Pristoceraea* Karsch and *Ocios* Wlk. (see Karsch, *Ent. Nachr.* 1895, p. 349). K. J.

l. Indo-Australian forms.

There was hitherto only one genus in this section, *Apina* Wlk., with one species, *A. callisto* Wlk.; I add a new genus based upon *Aegocera cornigera* Butl., and in future a third one must be erected for *Phalaenoides affinis* (Boisd.).

Ipana Jord. gen. nov.

♂ ♀. Forehead broadest in front of antennae, its supra-oral edge produced, with a flattened, somewhat recurved, and at the tip truncate or rounded horny processus, which is excavate above and convex below. Antennae biserially serrate in ♂, serrations very short and broad, scarcely narrower at the tip than the respective antennal joint is long; in ♀ the serrations are feeble, but can be noticed under a moderate lens, especially towards the apex of the antennae. Second joint of palpi clothed with elongate scales, which are shorter than the joint is long; third joint naked, about two or three times as long as broad. Hairlike scales on mid- and hindtibiae much shorter than the long spurs. Abdomen hairy only at tip.

Neuration: forewings with vein 10 from between middle and apex of areole; stalk of 8. 9 shorter than areole; second partition of median nervure longer than the respective portion of the outer margin. Hindwings with lower discocellular veinlet a little longer than, or as long as, the second partition of the median nervure.

Type: *Ipana cornigera* (Butler), *Tr. Ent. Soc. Lond.* 1886, p. 381 (Gayndah and Peak Downs).

Agarista diversa Wlk., *Lep. Het. B. M.* XXXI. p. 49 (1864) (N. Australia), belongs probably also in this new genus, which has nothing to do with *Aegocera* Latr., but comes close to *Apina* Wlk. *Apina* Wlk. differs from *Ipana* gen. nov. in the pectinations of the antennae being much longer, in the legs and palpi being clothed with long hairs, and in vein 2 of the forewings standing farther from the lower angle of the cell.

Ipana cornigera (Butl.) has been recorded from N. Australia and British New Guinea. William Doherty obtained some specimens of either sex at Oinainisa, Dutch Timor, November and December 1891, which do not seem to us to be subspecifically separable. This is the second case amongst *Agaristidae* of Timor and North Australia being inhabited by the same insect. *Agarista timorensis* Rothsch. sp. nov. (p. 48) may be quoted as a third case, indicating a relationship of the Timorese fauna to that of North Australia. K. J.

m. American forms with pectinate or serrate antennae.

The number of genera of this section is much greater in the Neotropical and Nearctic regions than in the Eastern hemisphere.

The genera *Aucula* Wlk., *Tr. Ent. Soc. Lond.* (3). I. p. 253 (1862), *Pycnodontis* Feld., and *Leiosoma* Feld. are closely allied to one another. In *Aucula* Wlk. the second partition of the median nervure to the fore- and hindwings is much longer than in the two uncharacterised Felderian genera. *Pycnodontis* Feld. has in the ♂ the antennae more shortly pectinate than *Leiosoma* Feld.; the latter, if really distinct from *Pycnodontis*, requires a new name, as *Leiosoma* has been preoccupied at least four times. I prefer to treat *Leiosoma* Feld. as a synonym of *Pycnodontis* Feld.

To *Aucula* Wlk. belongs *Diamuna adrasta* Druce, *Biol. Centr. Amer., Lep. Het.* I. p. 334. t. 30. f. 20 (1889) (Mexico). K. J.

Caularis Walker, *Lep. Het. B. M.* XII. p. 801 (1857).

I give the following description of this genus :—

Forehead with a thin conical horn, which is truncate at the tip, and is here about one-tenth as broad as the forehead. Antennae biserially pectinate, branches long, those of the fifth joint already longer than the joint is broad, those of the middle joints more than three times as long as the respective joints are broad. Second joint of palpi hairy; third joint more than twice as long as broad, nearly naked. Legs slenderer than in *Pycnodontis* Feld., otherwise similar.

Neuration: similar to that of *Pycnodontis* Feld. Discocellulars of hindwings concave before vein 5, straight and strongly oblique behind it; vein 5 therefore from below the deepest point of the discocellulars; second partition of median vein to hindwings shorter than the respective portion of the outer margin.

Type: *Caularis undulans* Wlk., *l.c.*

I do not know the genus *Robinsonia* Grote from Cuba, but it seems to me to have some affinities to *Caularis* Wlk. K. J.

We insert here, at the end of the *Agaristidae*, the description of a new species of *Sarothroceras* Mab., a genus of doubtful position.

29. **Sarothroceras sordidus** Rothsch. sp. nov.

Male.—*Upperside:* forewings differ from *S. pallida* (Druce) = *alluaudi* Mab. in the more dirty drab-brown ground-colour, and in the dark sepia-brown subbasal patch being much smaller: on the inner margin it has a length of 7½ millimetres, while in *S. pallida* it is 12, and in *S. rhomboidea* Weymer it is still bigger. Anteriorly its point reaches the hind end of the cell, and its outer edge is concave. The transverse whitish band of *pallida* is here much more ill-defined, being scarcely paler than the ground-colour of the wing, and is wider, extending to the angle of the inner margin. The apical spot is more defined, owing to the paler ground-colour of the wing. Hindwings as in *pallida*, but the discal area not red but yellow, and so densely powdered with drab scales as to be very indistinct and faint.

Underside similar to *pallida*, but discal area of hindwings yellow, and the outer margin broader.

Female.—Similar to *male*, but with the subbasal patch on forewings larger, its outer edge straight, and the pale band outside it almost as pale as in *pallida*.

Hab. Gold Coast: 2 ♂, 1 ♀.

This, as well as *rhomboidea* Weym., *St. E. Z.* 1892. p. 104, on receipt of more material, may prove to be only aberrations of *pallida* (Druce), but at present I prefer to keep the three species separate. W. R.

CHALCOSIIDAE.

30. **Histia nivosa** Rothsch. sp. nov.

Male.—*Upperside:* forewings white, costa and apical area brownish black; the latter 8 millimetres wide at apex, and running to a point at the submedian vein above the inner angle. Median nervure also black. Hindwings white, outer margin black.

Underside same as above, but costal margin of hindwings also black.

Antennae black, head red, collar same, with black dot on each side. Thorax beneath and abdomen red, the latter with five series of black spots.

Female.—Only differs from *male* in that the black of apical area does not reach the apex of cell.

Shape as in *H. selene* Kollar, but wings shorter and blunter.

Hab. Kina Balu, N. Borneo (obtained from Messrs. Staudinger & Bang-Haas); 1 ♂, 1 ♀. W. R.

31. **Canerkes javanicus** Rothsch. sp. nov.

Male.—Differs form *C. euschemoides* Moore in the borders to the nervures being violet instead of metallic blue-green, in the transverse yellow band being split up into spots and not joined to the basal yellow area, in the white spots of the apical half of forewings being much smaller, and in the yellow of both pairs of wings being orange-ochraceous.

Hab. Mount Gede, Java (Fruhstorfer, August 1892, 4000 feet); 1 ♂. W. R.

32. **Isbarta pandemia** Rothsch. sp. nov.

Female.—*Upperside:* forewings straw-white at basal half, with veins marked black. Apical half black, with veins picked out in dull steel-blue. One-fifth from the apex is a transverse row of almost obliterated grey spots between the nervures; this row curves inwards, so that at inner angle the distance from margin is least. There is also a white patch between the two lower median nervures. Hindwings—basal fourth lavender-grey, with red of underside shining through; rest of wing smoky black, with a large creamy discal patch shading off into primrose-yellow, and reaching from abdominal margin, where it is 10 millimetres wide, to the subcostal vein, and shading off into basal grey area.

Underside: forewings black, with steel-blue gloss on veins, a large creamy patch in cell, two beyond it, and one between the two submedian veins. The transverse row of subapical spots white, and much more distinct than above. Hindwings black, with veins and apex steel-blue; a large triangular basal patch of red extends from the abdominal margin to the middle vein of cell. A primrose-yellow spot in apex of cell, and two subapical ones. A large triangular primrose patch reaches from abdominal margin, where it is widest, to vein 5, towards which it rapidly diminishes; in its anterior part it is cut up into spots by the black veins.

Body above pale steel-blue, abdomen beneath greyish white.

Another *female* has the forewings in basal half nearly glaucous, the creamy white scaling having almost vanished.

Expanse: forewing AM 33 mm.; EM 19 mm.; PM 25 mm.
„ hindwing „ 25 „ ; „ 20 „ ; „ 19 „

Hab. Kina Balu, N. Borneo (obtained from Messrs. Staudinger & Bang-Haas); 2 ♀.

This strange and beautiful species is an exact mimic in appearance and marking of *Delias pandemia* Staud., after which I named it. W. R.

ARCTIIDAE.

33. **Eligma malgassica** Rothsch. sp. nov.

♀. *Upperside:* forewings—the brown costal area narrower than in the other species of *Eligma*, its hind edge faintly bordered with yellow; it is, close to the base and again 9 mm. from the base, dilated rectangularly, then is parallel to costa for about 8 or 9 mm.; at apex of cell it is indented, and from there becomes somewhat broader again for about 3 or 4 mm., and then runs towards the apex of the wing, this apical portion being dentate at the veins; the three basal black spots of the other species are here not rounded, but transverse, and form an interrupted zigzag line; the subbasal black line of *E. hypsoides* Wlk. and *duplicata* Auriv. is very thin, strongly undulate, and not interrupted; the black line on the posterior part of the disc runs from the inner margin to the base of vein 3, being twice strongly curved, then turns round in the direction of the two black spots which stand between veins 3 and 5, so as to form with them an almost continuous line; in the curve behind apex of cell the line is double. The submarginal black spots are linear, transverse, and oblique. The middle of the wing behind the costal brown area is whitish, as in *hypsoides* Wlk., while the rest of the wing is fawn-colour, with a whitish zigzag band outside the subbasal black line and two more zigzag lines between discal black line and outer margin. Hindwings yellow, as in the other species, with a brownish black outer border, which has at apex a breadth of 6 mm., runs a little along costa, and is strongly tapered off behind, scarcely reaching as far as extremity of vein 1ᵇ.

Underside: forewings yellow from base to 4 mm. beyond apex of cell, apical region brown. Hindwings as above, marginal border shorter.

Outline of wings nearly as in *E. narcissus* (Cram.).

Palpi, head, thorax, abdomen, and legs similar to those of *E. duplicata* Auriv.

Expanse: forewing AM 30 mm.; EM 14 mm.; PM 21 mm.
„ hindwing „ 22 „ ; „ 20 „ ; „ 12 „

Hab. Morondava, Madagascar (Last); 2 ♀.

This species is easily distinguished from the African *E. hypsoides* Wlk. and *duplicata* Auriv., *Ent. Tidskr.* 1892. p. 191. f. 1ᵇ, by the apex of the hindwing being without a white patch, and from the Indian *E. narcissus* (Cram.) by the outline of the costal area of the forewings, the subbasal black line, the form of the discal line, the much narrower black border to the hindwings, and on the underside by the basal two-thirds of the forewings being yellow. W. R.

34. **Eligma narcissus indica** Rothsch. subsp. nov.

♀. Differs from typical *E. narcissus* (Cram.) from China as follows: forewings shorter and broader; if we take the breadth of the wing as 1, the length is 2½ in *indica* and 3 in *narcissus*; outer margin much less oblique between veins 1 and 3; the white colour behind the costal area is more extended, and the posterior region of the wing is of a paler isabella colour; the anterior portion of the median interrupted transverse black line is shorter and broader, and the submarginal spots are

more prominent. On the hindwing the bluish black border is deeper concave between veins 4 and 7 than in the *female* of *narcissus*, and therefore appears more convex at vein 2.

Below, the forewings and the apex of the hindwings are paler in colour, and have a feebler bluish gloss.

Hab. Nilgiri Hills, S. India; 3 ♀. W. R.

35. **Eligma narcissus javanica** Rothsch. subsp. nov.

♀. Smaller than *narcissus*, forewings similar in shape; anterior portion of the transverse black median line as in *indica*; blue-black apical area of hindwings broader, evenly concave, at vein 4 only 1 millimetre short of cell. Dorsal black spots of abdomen very small.

Hab. Java; 1 ♀. W. R.

36. **Eligma narcissus philippinensis** Rothsch. subsp. nov.

♀. Forewings somewhat broader than in *narcissus*; emargination of outer margin to hindwings less obvious. Submarginal spots of forewings much larger than in the other subspecies; anterior portion of black interrupted median line forming a rounded dot; white longitudinal streaklike area as in *indica*; blue-black apical region of hindwings as broad as in *javanica* and of the same shape. Posterior tibiae without a black spot.

Hab. Mindoro; 1 ♀. W. R.

Oberthür describes and figures in *Et. d'Ent.* XVII. 1893. p. 32. t. 1. f. 6, a beautiful moth from Usambara, German East Africa, as *Eligma laetepicta*, which has a quite different aspect from the other species of the genus. We recently received a *female* specimen of this insect from Nguela, Usambara, which, on examination, proves that *laetepicta* Oberth. can very well be referred to *Eligma* Hb., as it exhibits only the following slight structural differences: the areole is broader, vein 7 comes from below the apex of the areole, and vein 6 stands farther from the areole than in *narcissus*, *duplicata*, and *malgassica*.

The species of *Eligma* Hb. hitherto known to science (and all contained in the Tring Museum) can be distinguished as follows: –

A. Forewing with two yellow transverse bands. *E. laetepicta* Oberth. from East Africa.

B. Forewing without those bands.

a. Apex of hindwing with a white patch.

*a*¹. Forewing with a single transverse line running from beyond middle of hindmargin to apex of cell. *E. hypsoides* Wlk. from West Africa. We have 2 ♀ from the Lower Niger.

*b*¹. Forewing with that line double. *E. duplicata* Auriv., *Ent. Tidskr.* 1892. p. 191. f. 1ᵇ, from Cameroons.

b. Apex of hindwing without white patch.

*c*¹. Forewing beneath yellow, with apical third brown. *E. malgassica* Rothsch. sp. nov. from Madagascar.

*d*¹. Forewing beneath brown with blue gloss, extreme base yellow. *E. narcissus* (Cram.) from China and its subspecies from South India, Java, and Mindoro. K. J.

AGANAIDAE (=HYPSIDAE).

We include in this family only the forms allied to *Asota* Hb. (= *Hypsa* Hb.) which are characterised especially by the presence of a proboscis and by veins 7 and 8 of the hindwings being connected by a bar near the middle of the cell, and differ in the first character from the *Lymantriidae* and in the second from the *Arctiidae*. With Hampson, *Moths of India* I., we have to exclude from the *Aganaidae* the following genera of Kirby's *Catalogue of Heterocera* I. pp. 383–393 :—

1. *Sebastia* Kirby, *l.c.* p. 383 (1891) is Arctiid. New synonym: *Moorea* Hampson, *l.c.* II. p. 33 (1894).
2. *Eligma* Hb. is Arctiid. (*s.l.*).
3. *Bapata* Wlk. ,,
4. *Agaposoma* Feld. ,,
5. *Stenognatha* Feld. ,,
6. *Cargatis* Hb. ,,
7. *Godasa* Wlk. is Agaristid.
8. *Calpenia* Moore is Arctiid.
9. *Migoplastis* Feld. ,,
10. *Zaracha* Wlk. ,,
11. *Eggbolis* Boisd. ,,

Meyrick, *Proc. Linn. Soc. N. S. Wales* 1886, p. 758, brings *Nyctemera* Hb. and *Anerila* Wlk. to the *Aganaidae*; we cannot agree with him that these genera are more nearly allied to *Asota* Hb. than to other Arctioid moths. *Digama* Moore is regarded by Meyrick as an unattached genus differing from *Asota* "essentially in having vein 8 of the hindwings approximated but not connected to the upper margin of cell." This statement is quite correct as regards *Digama hearseyana* Moore, the type of the genus, and the only Australian species hitherto known, *D. marmorea* Butl., but does not apply to several other species standing at present under *Digama*, for example *D. insulana* Feld. and *marchali* Guér., and, therefore, we shall in this paper treat *Digama* as an Hypsid, and give a fuller explanation of the Hypsoid characters of this genus at the end of the family.

A revision of the *Aganaidae*, exclusive of *Digama* Moore, has been given by Snellen in *Tijdschr. v. Ent.* XXXI. p. 109 (1888), and we should restrict ourselves to a few notes about some oversights and errors in that excellent paper, if it were not for Kirby's *Catalogue of Heterocera* and Hampson's *Moths of India*, the authors of which works do not seem to have taken any notice of Snellen's classificatory results. The Indian AGANAIDAE, exclusive of *Digama*, are divided into three genera by Hampson and into nine by Kirby, while Snellen enumerates them under five well-characterised genera. As our researches show that Hampson unites under *Hypsa* a number of very heterogeneous forms, and that several of the genera in Kirby's *Catalogue* are identical, and also prove that Snellen's division of the family into five genera is not quite correct, we shall dilate a little longer upon this family, the more so as, besides the genera, the species also are in rather a great muddle. K. J.

Agape Snellen.

Hypsa, Walker (*nec* Hübner), *Lep. Het. B. M.* II p. 455 (1854).
Agape Felder, *Reise Novara Lep.* II. (1874) (*nom. nud.*); Snellen, *Tijdschr. v. Ent.* XXXI pp. 115. 116 (1888).

This is a very peculiar genus, and stands quite isolated amongst the Hypsids in the absence of the cavity from the forewing and the corresponding patch of scabrous scales from the upperside of the hindwing which are found in the allied genera. Snellen was the first to find this out: Meyrick, *Proc. Linn. Soc. N. S. Wales* 1886. p. 771, has *Agape chloropyga* (Wlk.) under the genus *Hypsa*, which he characterises *inter alia* by the presence of that supposed stridulatory organ; Hampson has *Agape* also as a synonym of *Hypsa*. *Agape* differs, moreover, in the absence of the costal retinaculum in the *male*, either sex only having the retinaculum at the median nervure, which is again an exception amongst *Aganaidae*. The antennae are similar to those of *Asota* Hb. described on p. 61. The terminal joint of the palpi is shorter than the second joint. Vein 7 of forewings originates from the apex of the areole, or is shortly stalked with 8, 9; veins 6 and 7 of the hindwings are shortly stalked or arise from a point.

To *Agape* Snellen belong two species, *chloropyga* (Wlk.) and *leonina* Butl.; the other two species which stand in Kirby's *Catalogue* under *Agape*, *javana* Cram. and *celebensis* Hopff., have nothing to do with this genus.

The Moluccan and Australian specimens of *A. chloropyga* (Wlk.) can generally be distinguished from one another by the shape of the exterior brown spot on the forewings. In our extensive series of *chloropyga* (Wlk.) from Queensland that spot is round and always well defined: out of our thirteen specimens from Amboina it is only in one example rounded, in all others it is anguliform or it is so much prolonged as to form a complete band which extends from the costal to inner margin, as described by Snellen, *l.c.* The two spots beyond cell are sometimes very feebly marked in Moluccan examples, and on such specimens *A. anatis* Wlk. seems to be based.

Of *Agape leonina* Butl. there are two *males* only in the Tring Museum from New Britain, which differ from the *male* of *chloropyga* (Wlk.) in the black spots on the thorax being very feeble, and in the two preanal segments of the abdomen being ochreous with bluish black basal marks instead of being above entirely blue-black.

A *male* specimen from Alu Island, Solomon Islands, captured by Captains Cotton & Webster, has a complete brown transverse band across the basal fourth of the wing, and another band in the apical fourth similar to that of the above-mentioned variety of *chloropyga* (Wlk.); the spots on the thorax are scarcely traceable under a lens; the spot on the first joint of the palpi is very small and isabella-colour, not black; the blue-black colour at the bases of the abdominal segments is reduced, and absent from the preanal segment.

Another *male* from Lifu, Loyalty Islands, is still more different from *leonina* Butl. The thoracic spots are entirely obliterated; the eighth and ninth abdominal segments are above much more extended bluish black, in fact the upperside of the eighth segment is bluish black with only the hinder edge yellow. As this Lifu example is, besides, smaller and has broader forewings than *leonina*, it belongs most probably to a subspecies of *leonina*; we can, however, not give a name to it until we have more material. K. J.

Aganais Boisd.

Phalaena Noctua, Drury, *Illustr. Nat. Hist.* II. Index (1773).
Noctua, Fabricius, *Syst. Ent.* p. 595 (1775).
Phalaena Bombyx, Stoll, *Pap. Ex.* III. p. 173 (1782).
Damalis Hubner (*nec* Fabricius, 1805), *Verz. bek. Schm.* p. 172 (1822 ?) (*e.p.*).
Aganais Boisduval, *Voy. Astrolabe, Ent.* p. 248 (1832) (*e.p.; nomen nudum*) ; id., *Faune Ent. de Madagascar* p. 96 (1833) (*e.p.*) ; Hopff., *Monatsb. Königl. Akad. Wiss. Berlin* 1857. p. 422 ; id., Peter's *Reise Moz., Ins.* p. 432 (1862).
Hypsa group 8, *Lucides* Walker, *Lep. Het. B. M.* II. p. 456 (1854).
Hypsa, subgenus *Lucides*, Butler, *Tr. Ent. Soc. Lond.* 1875. p. 321.
Hypsa, subgenus *Aganais* (part), id., *l.c.* p. 322.
Hypsa, group B (*Aganais* Butler), Snellen, *Tijdschr. v. Ent.* XXXI. p. 125 (1888).
Lucides, Moore, *Lep. of Ceyl.* II. p. 53 (1883) ; Kirby, *Cat. Lep. Het.* I. p. 385 (1891).
Pseudhypsa Kirby, *l.c.* p. 384 (1891).
Hypsa, Section II. (*Lucides*), Hampson, *Moths of India* I. p. 504 (1894).

The distinguishing characters of this genus lie especially in the structure of the antennae. Snellen, as well as Hampson, says of the antennae of the *male* only that the fasciculae are long : the important differences between the *male* and *female* antennae of *Aganais* and those of *Asota* (= *Hypsa*) have not yet been noticed, though these differences are obvious under a weak lens. In *Aganais* Boisd. the joints of the antennae of either sex are cylindrical, as can be seen from a section through the antennae, and in the *male* each joint (except the apical ones) bears on each side a long processus of even breadth, which itself is furnished dorsally at the tip with a bristle. In *Asota* Hb. the antennae of either sex are compressed ; a transverse section of the *female* antennae has an ovate outline, with the lower end often acute, each joint being rounded at the upperside, and carinate, or nearly so, at the underside ; in the *male* of *Asota* Hb. the cariniform portion of the under surface is high, which can easily be noticed by looking at the antennae from the side ; as the edge of the carina is shorter than the respective joint, there is an interspace between the carinae of every two joints, which gives the antennae of the *male* in a side view the appearance of a broad-toothed saw. The cariniform portion of the joints is covered with fine hairs and bears a pair of bristles, while the dorsal portion is scaled and is furnished on each side with a longer bristle, varying in length and thickness according to sex and species. In *Aganais* ♂ the lateral processus originate from the ventral side of the joint and are hairy beneath ; the bristles at their extremities are homologons to the dorsal bristles in *Asota*. Further notes about the antennae of *Asota* and figures will be found under this genus.

Boisduval introduced the name of *Aganais* first in *Voyage de l'Astrolabe* 1832, but did not give a description of the genus ; the species which he describes there under *Aganais* are generically different from his two species described under *Aganais* in *Faune Ent. de Madagascar* p. 96. Boisduval applied the name nearly to all *Aganaidae* he knew ; Butler and Snellen restricted it to the species allied to *borbonica* Boisd. ; Kirby gives *caricae* Fabr. as type, and includes in it a great number of Indo-Australian forms. As *Aganais* of *Voyage de l'Astrolabe* is a *nomen nudum*, we dare not take it into consideration ; under *Aganais* of *Faune Entomologique de Madagascar* only two species are mentioned by name, *borbonica* and *insularis*, which are *male* and *female* of one species. Type of *Aganais* is, therefore, doubtless *borbonica* Boisd., and *Pseudhypsa* Kirby has to sink as a synonym. To *Aganais* Boisd. belong the following Hypsids of Kirby's *Catalogue* : *Pseudhypsa speciosa* (Drury), *subretracta*

Wlk. (*aphidas* Hopff.), *undulifera* Wlk.), *borbonica* (Boisd.); *Lacides ficus* (Fabr.); *Aganais insularis* Boisd.

Pseudhypsa ambusta (Mab.) is an Agaristid (see p. 16).

As *Lacides ficus* (Fabr.) can by no means be kept generically separate from *Aganais borbonica* Boisd., *Lacides* must sink as a synonym.

Aganais insularis Boisd. has been treated by Herrich-Schäffer, *Samml. auss. Schm.* f. 118, and Saalmüller, *Lep. von Madagascar* p. 160, as the *female* of *borbonica* Boisd.; Butler, *l.c.* p. 323, Snellen, *l.c.* p. 132, and Kirby, *l.c.* p. 387, regard it as a close relative of *Asota egens* (Wlk.) and bring it accordingly into a different genus or section respectively. The structure of the antennae of *insularis* is the same as in *Aganais speciosa* ♀, *ficus* ♀, and the other forms mentioned above; *insularis* is therefore doubtless an *Aganais*. Further, as of *borbonica* only *males* and of *insularis* only *females* are known, and both insects inhabit the same districts, it is also beyond doubt that these two *Aganais* are really *male* and *female* of the same species.

Aganais aphidas (Hopff.) is the same as *subretracta* (Wlk.), as already mentioned by Butler, *l.c.*; Kirby gives it again as a distinct species.

Aganais speciosa (Drury) is a very variable species. Drury's figure is rather bad, especially in respect to the pattern of the forewings; his description is much better, and leaves no doubt that *speciosa* is that form of *Aganais* which has the hindwings pure white. Our series of forty specimens of African *Aganais* includes so many individuals which are intermediate between *speciosa*, *subretracta*, and *undulifera* that we cannot draw a parting line between these forms, and have accordingly to unite them to one species; the four forms are not restricted to certain districts, but occur all over tropical and South Africa, and are therefore mere individual aberrations. The hindwings are white, yellowish white, or orange; they are unicolorous or have a minute black point near anal angle, or a black anguliform mark instead of that point; the apex is with or without black border; this border is very narrow or broad, reaches to near anal angle or is shorter; the forewings are isabella-colour or are ochraceous like the hindwings, with the usual basal patch of a faintly deeper tint. K. J.

37. Aganais speciosa (Drury) ab. unicolor Rothsch. ab. nov.

This is the most conspicuous aberration, having the ground-colour of both wings ochraceous: the black spots at the base of the forewings as in *speciosa* (Drury). I have 1 ♂ from Natal and 1 ♀ from Namaqualand. The various forms of *speciosa* have to stand as follows:—

1. Hindwings pure white: *speciosa* (Drury).
2. „ white or ochraceous, with black border: ab. *undulifera* (Wlk.).
3. „ ochraceous, without black border: ab. *subretracta* (Wlk.).
4. Fore- and hindwings ochraceous: ab. *unicolor* Rothsch. W. R.

(To be continued.)